



EPA KEY CONTACTS FORM

OMB Number: 2030-0020
Expiration Date: 06/30/2024

Authorized Representative: *Original awards and amendments will be sent to this individual for review and acceptance, unless otherwise indicated.*

Name:	Prefix: Mrs.	First Name: Octavia	Middle Name:
	Last Name: Dryden		Suffix:
Title:	Executive Director		
Complete Address:			
Street1:	Ex. 6 Personal Privacy (PP)		
Street2:			
City:	Bear	State:	DE: Delaware
Zip / Postal Code:	19701	Country:	USA: UNITED STATES
Phone Number:	Ex. 6 Personal Privacy (PP)	Fax Number:	302-595-3565
E-mail Address:	Ex. 6 Personal Privacy (PP)		

Payee: *Individual authorized to accept payments.*

Name:	Prefix: Mrs.	First Name: Octavia	Middle Name:
	Last Name: Dryden		Suffix:
Title:	Executive Director		
Complete Address:			
Street1:	Ex. 6 Personal Privacy (PP)		
Street2:			
City:	Bear	State:	DE: Delaware
Zip / Postal Code:	19701	Country:	USA: UNITED STATES
Phone Number:	Ex. 6 Personal Privacy (PP)	Fax Number:	302-595-3565
E-mail Address:	Ex. 6 Personal Privacy (PP)		

Administrative Contact: *Individual from Sponsored Programs Office to contact concerning administrative matters (i.e., indirect cost rate computation, rebudgeting requests etc).*

Name:	Prefix: Mrs.	First Name: Octavia	Middle Name:
	Last Name: Dryden		Suffix:
Title:	Executive Director		
Complete Address:			
Street1:	Ex. 6 Personal Privacy (PP)		
Street2:			
City:	Bear	State:	DE: Delaware
Zip / Postal Code:	19701	Country:	USA: UNITED STATES
Phone Number:	Ex. 6 Personal Privacy (PP)	Fax Number:	302-595-3565
E-mail Address:	Ex. 6 Personal Privacy (PP)		

EPA KEY CONTACTS FORM

Project Manager: *Individual responsible for the technical completion of the proposed work.*

Name: Prefix: First Name: Middle Name:
Last Name: Suffix:
Title:

Complete Address:

Street1:
Street2:
City: **State:**
Zip / Postal Code: **Country:**
Phone Number: **Fax Number:**
E-mail Address:

Other Attachment File(s)

* Mandatory Other Attachment Filename:

Add Mandatory Other Attachment

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To add more "Other Attachment" attachments, please use the attachment buttons below.

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View Optional Other Attachment

Application for Federal Assistance SF-424

* 1. Type of Submission:

- ☐ Preapplication
☒ Application
☐ Changed/Corrected Application

* 2. Type of Application:

- ☒ New
☐ Continuation
☐ Revision

* If Revision, select appropriate letter(s):

* Other (Specify):

* 3. Date Received:

03/25/2022

4. Applicant Identifier:

5a. Federal Entity Identifier:

5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

Delaware

8. APPLICANT INFORMATION:

* a. Legal Name:

Community Housing and Empowerment Connections Inc.

* b. Employer/Taxpayer Identification Number (EIN/TIN):

51-0411465

* c. Organizational DUNS:

8262318000000

d. Address:

* Street1:

Ex. 6 Personal Privacy (PP)

Street2:

* City:

Bear

County/Parish:

Delaware

* State:

DE: Delaware

Province:

* Country:

USA: UNITED STATES

* Zip / Postal Code:

19701-6830

e. Organizational Unit:

Department Name:

Division Name:

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:

Mrs.

* First Name:

Octavia

Middle Name:

* Last Name:

Dryden

Suffix:

Title:

Executive Director

Organizational Affiliation:

Community Housing & Empowerment Connections Inc.

* Telephone Number:

Ex. 6 Personal Privacy (PP)

Fax Number:

302-595-3565

* Email:

Ex. 6 Personal Privacy (PP)

Application for Federal Assistance SF-424

* 9. Type of Applicant 1: Select Applicant Type:

M: Nonprofit with 501C3 IRS Status (Other than Institution of Higher Education)

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

* 10. Name of Federal Agency:

Environmental Protection Agency

11. Catalog of Federal Domestic Assistance Number:

66.034

CFDA Title:

Surveys, Studies, Research, Investigations, Demonstrations, and Special Purpose Activities
Relating to the Clean Air Act

* 12. Funding Opportunity Number:

EPA-OAR-OAQPS-22-01

* Title:

Enhanced Air Quality Monitoring for Communities

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

Add Attachment

Delete Attachment

View Attachment

* 15. Descriptive Title of Applicant's Project:

Community-Engaged Air Quality Monitoring in New Castle County, Delaware

Attach supporting documents as specified in agency instructions.

Add Attachments

Delete Attachments

View Attachments

Application for Federal Assistance SF-424**16. Congressional Districts Of:*** a. Applicant * b. Program/Project

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment

Delete Attachment

View Attachment

17. Proposed Project:* a. Start Date: * b. End Date: **18. Estimated Funding (\$):**

* a. Federal	<input type="text" value="357,852.00"/>
* b. Applicant	<input type="text" value="0.00"/>
* c. State	<input type="text" value="0.00"/>
* d. Local	<input type="text" value="0.00"/>
* e. Other	<input type="text" value="0.00"/>
* f. Program Income	<input type="text" value="0.00"/>
* g. TOTAL	<input type="text" value="357,852.00"/>

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

- ☐ a. This application was made available to the State under the Executive Order 12372 Process for review on .
- ☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.
- ☒ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**☐ Yes ☒ No

If "Yes", provide explanation and attach

Add Attachment

Delete Attachment

View Attachment

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

☒ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: * First Name:

Middle Name:

* Last Name:

Suffix:

* Title: * Telephone Number: Fax Number: * Email: * Signature of Authorized Representative: * Date Signed:

BUDGET INFORMATION - Non-Construction Programs

OMB Number: 4040-0006
Expiration Date: 02/28/2022

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Enhanced Air Quality Monitoring for Communities Environmental Protection Agency	EPA-OAR-OAQPS-2	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text" value="357,852.00"/>	\$ <input type="text"/>	\$ <input type="text" value="357,852.00"/>
2. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
3. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
4. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
5. Totals		\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text" value="357,852.00"/>	\$ <input type="text"/>	\$ <input type="text" value="357,852.00"/>

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SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1)	(2)	(3)	(4)	
	Enhanced Air Quality Monitoring for Communities Environmental Protection Agency				
a. Personnel	\$ 156,000.00	\$	\$	\$	\$ 156,000.00
b. Fringe Benefits	26,520.00				26,520.00
c. Travel	2,600.00				2,600.00
d. Equipment	60,000.00				60,000.00
e. Supplies	4,600.00				4,600.00
f. Contractual	75,600.00				75,600.00
g. Construction	0.00				0.00
h. Other	0.00				0.00
i. Total Direct Charges (sum of 6a-6h)	325,320.00				\$ 325,320.00
j. Indirect Charges	32,532.00				\$ 32,532.00
k. TOTALS (sum of 6i and 6j)	\$ 357,852.00	\$	\$	\$	\$ 357,852.00
7. Program Income	\$ 0.00	\$	\$	\$	\$ 0.00

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SECTION C - NON-FEDERAL RESOURCES					
(a) Grant Program		(b) Applicant	(c) State	(d) Other Sources	(e)TOTALS
8.	Enhanced Air Quality Monitoring for Communities Environmental Protection Agency	\$ 0.00	\$	\$	\$ 0.00
9.					
10.					
11.					
12. TOTAL (sum of lines 8-11)		\$ 0.00	\$	\$	\$ 0.00

SECTION D - FORECASTED CASH NEEDS					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ 130,000.00	\$ 52,000.00	\$ 28,000.00	\$ 25,000.00	\$ 25,000.00
14. Non-Federal	\$				
15. TOTAL (sum of lines 13 and 14)	\$ 130,000.00	\$ 52,000.00	\$ 28,000.00	\$ 25,000.00	\$ 25,000.00

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT					
(a) Grant Program		FUTURE FUNDING PERIODS (YEARS)			
		(b)First	(c) Second	(d) Third	(e) Fourth
16.	Enhanced Air Quality Monitoring for Communities Environmental Protection Agency	\$ 52,000.00	\$ 175,852.00	\$	\$
17.					
18.					
19.					
20. TOTAL (sum of lines 16 - 19)		\$ 52,000.00	\$ 175,852.00	\$	\$

SECTION F - OTHER BUDGET INFORMATION	
21. Direct Charges:	22. Indirect Charges:
23. Remarks:	

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Preaward Compliance Review Report for All Applicants and Recipients Requesting EPA Financial Assistance

Note: Read Instructions before completing form.

I. A. Applicant/Recipient (Name, Address, City, State, Zip Code)

Name: Community Housing and Empowerment Connections Inc.

Address: Ex. 6 Personal Privacy (PP)

City: Bear

State: DE: Delaware

Zip Code: 19701

B. DUNS No. 826231800

II. Is the applicant currently receiving EPA Assistance? ☐ Yes ☒ No

III. List all civil rights lawsuits and administrative complaints pending against the applicant/recipient that allege discrimination based on race, color, national origin, sex, age, or disability. (Do not include employment complaints not covered by 40 C.F.R. Parts 5 and 7.)

na

IV. List all civil rights lawsuits and administrative complaints decided against the applicant/recipient within the last year that allege discrimination based on race, color, national origin, sex, age, or disability and enclose a copy of all decisions. Please describe all corrective actions taken. (Do not include employment complaints not covered by 40 C.F.R. Parts 5 and 7.)

na

V. List all civil rights compliance reviews of the applicant/recipient conducted by any agency within the last two years and enclose a copy of the review and any decisions, orders, or agreements based on the review. Please describe any corrective action taken. (40 C.F.R. § 7.80(c)(3))

na

VI. Is the applicant requesting EPA assistance for new construction? If no, proceed to VII; if yes, answer (a) and/or (b) below.

☐ Yes ☒ No

a. If the grant is for new construction, will all new facilities or alterations to existing facilities be designed and constructed to be readily accessible to and usable by persons with disabilities? If yes, proceed to VII; if no, proceed to VI(b).

☐ Yes ☒ No

b. If the grant is for new construction and the new facilities or alterations to existing facilities will not be readily accessible to and usable by persons with disabilities, explain how a regulatory exception (40 C.F.R. 7.70) applies.

na

VII. Does the applicant/recipient provide initial and continuing notice that it does not discriminate on the basis of race, color, national origin, sex, age, or disability in its program or activities? (40 C.F.R. 5.140 and 7.95)

☒ Yes ☐ No

a. Do the methods of notice accommodate those with impaired vision or hearing?

☒ Yes ☐ No

b. Is the notice posted in a prominent place in the applicant's offices or facilities or, for education programs and activities, in appropriate periodicals and other written communications?

☒ Yes ☐ No

c. Does the notice identify a designated civil rights coordinator?

☒ Yes ☐ No

VIII. Does the applicant/recipient maintain demographic data on the race, color, national origin, sex, age, or handicap of the population it serves? (40 C.F.R. 7.85(a))

☒ Yes ☐ No

IX. Does the applicant/recipient have a policy/procedure for providing access to services for persons with limited English proficiency? (40 C.F.R. Part 7, E.O. 13166)

☒ Yes ☐ No

- X. If the applicant is an education program or activity, or has 15 or more employees, has it designated an employee to coordinate its compliance with 40 C.F.R. Parts 5 and 7? Provide the name, title, position, mailing address, e-mail address, fax number, and telephone number of the designated coordinator.

na

- XI. If the applicant is an education program or activity, or has 15 or more employees, has it adopted grievance procedures that assure the prompt and fair resolution of complaints that allege a violation of 40 C.F.R. Parts 5 and 7? Provide a legal citation or Internet Address for, or a copy of, the procedures.

na

For the Applicant/Recipient

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law. I assure that I will fully comply with all applicable civil rights statutes and EPA regulations.

A. Signature of Authorized Official

Octavia Dryden

B. Title of Authorized Official

Executive Director

C. Date

03/25/2022

For the U.S. Environmental Protection Agency

I have reviewed the information provided by the applicant/recipient and hereby certify that the applicant/recipient has submitted all preaward compliance information required by 40 C.F.R. Parts 5 and 7; that based on the information submitted, this application satisfies the preaward provisions of 40 C.F.R. Parts 5 and 7; and that the applicant has given assurance that it will fully comply with all applicable civil rights statutes and EPA regulations.

A. *Signature of Authorized EPA Official

B. Title of Authorized Official

C. Date

*** See Instructions**

Instructions for EPA FORM 4700-4 (Rev. 06/2014)

General. Recipients of Federal financial assistance from the U.S. Environmental Protection Agency must comply with the following statutes and regulations.

Title VI of the Civil Rights Acts of 1964 provides that no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. The Act goes on to explain that the statute shall not be construed to authorize action with respect to any employment practice of any employer, employment agency, or labor organization (except where the primary objective of the Federal financial assistance is to provide employment). Section 13 of the 1972 Amendments to the Federal Water Pollution Control Act provides that no person in the United States shall on the ground of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under the Federal Water Pollution Control Act, as amended. Employment discrimination on the basis of sex is prohibited in all such programs or activities. Section 504 of the Rehabilitation Act of 1973 provides that no otherwise qualified individual with a disability in the United States shall solely by reason of disability be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. Employment discrimination on the basis of disability is prohibited in all such programs or activities. The Age Discrimination Act of 1975 provides that no person on the basis of age shall be excluded from participation under any program or activity receiving Federal financial assistance. Employment discrimination is not covered. Age discrimination in employment is prohibited by the Age Discrimination in Employment Act administered by the Equal Employment Opportunity Commission. Title IX of the Education Amendments of 1972 provides that no person in the United States on the basis of sex shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance. Employment discrimination on the basis of sex is prohibited in all such education programs or activities. Note: an education program or activity is not limited to only those conducted by a formal institution. 40 C.F.R. Part 5 implements Title IX of the Education Amendments of 1972. 40 C.F.R. Part 7 implements Title VI of the Civil Rights Act of 1964, Section 13 of the 1972 Amendments to the Federal Water Pollution Control Act, and Section 504 of The Rehabilitation Act of 1973. The Executive Order 13166 (E.O. 13166) entitled; "Improving Access to Services for Persons with Limited English Proficiency" requires Federal agencies work to ensure that recipients of Federal financial assistance provide meaningful access to their LEP applicants and beneficiaries.

Items "Applicant" means any entity that files an application or unsolicited proposal or otherwise requests EPA assistance. 40 C.F.R. §§ 5.105, 7.25. "Recipient" means any entity, other than applicant, which will actually receive EPA assistance. 40 C.F.R. §§ 5.105, 7.25. "Civil rights lawsuits and administrative complaints" means any lawsuit or administrative complaint alleging discrimination on the basis of race, color, national origin, sex, age, or disability pending or decided against the applicant and/or entity which actually benefits from the grant, but excluding employment complaints not covered by 40 C.F.R. Parts 5 and 7. For example, if a city is the named applicant but the grant will actually benefit the Department of Sewage, civil rights lawsuits involving both the city and the Department of Sewage should be listed. "Civil rights compliance review" means any review assessing the applicant's and/or recipient's compliance with laws prohibiting discrimination on the basis of race, color, national origin, sex, age, or disability. Submit this form with the original and required copies of applications, requests for extensions, requests for increase of funds, etc. Updates of information are all that are required after the initial application submission. If any item is not relevant to the project for which assistance is requested, write "NA" for "Not Applicable." In the event applicant is uncertain about how to answer any questions, EPA program officials should be contacted for clarification. * Note: Signature appears in the Approval Section of the EPA Comprehensive Administrative Review For Grants/Cooperative Agreements & Continuation/Supplemental Awards form.



March 7, 2022

Octavia Dryden
403 Sun Blvd.
Bear, DE 19701

To Whom it May Concern:

Clean Air Council fully supports Community Housing Empowerment Connections Inc. (CHEC) and Johns Hopkins University's application for the Environmental Protection Agency's (EPA) grant opportunity titled Enhanced Air Quality Monitoring for Communities (RFA#: EPA-OAR-OAQPS-22-01).

Clean Air Council has worked with CHEC for several years in the effort to support Clean Air Council's program to install low-cost particulate matter monitors across the state of Delaware. Clean Air Council acknowledges the need for expanded air monitoring in the state of Delaware. Clean Air Council commits to continually supporting CHEC in its efforts to gather and distribute air quality information in the effort to improve air quality and protect public health.

Community Housing Empowerment Connections Inc. (CHEC) and its main partner, Johns Hopkins University seek funding from the EPA Enhanced Air Quality Monitoring for Communities grant opportunity to implement community-engaged air quality monitoring in New Castle County, Delaware that uses a collaborative, community - engaged process to develop a community-led air monitoring network and attains the scientific rigor required for research, while also achieving community priorities. By engaging community residents in the project design, monitor siting processes, data dissemination, and other key activities, the resulting air monitoring network data will be relevant, trusted, understandable, and used by community residents.

Please let me know if you have any further questions.

Best Regards,

Russell Zerbo, Advocate with Clean Air Council

rzerbo@cleanair.org, 215-567-4004 x130



Institute for Research on Equity and Community Health (IREACH)
4000 Nexus Drive, CEI-300
Wilmington, DE 19803

March 9, 2022

Octavia Dryden
Executive Director
Community Housing & Empowerment Connections Inc.
Ex. 6 Personal Privacy (PP)
Bear, DE 19701

Dear Mrs. Dryden:

I write to express my strongest possible support for the Community Housing & Empowerment Connections Inc.'s (CHEC) and its main partner's, John Hopkins University's application for funding from the EPA Enhanced Air Quality Monitoring Grant program. Your proposal, *Community-Engaged Air Quality Monitoring in New Castle County, Delaware*, to develop a community-led air monitoring network in northern Delaware will address long-standing community concerns about disproportionate exposures to environmental pollutants in the region and will establish critical infrastructure, capacity and data that can be used to examine and address environmental injustice and health equity. Your partnership of community, university and other community stakeholders in this endeavor will enhance the local-relevance, rigor and translation of findings into programs and policies to address health inequities.

As a longstanding collaborator of yours, I am thrilled to offer my support for your proposed project. I have been impressed with your leadership in environmental justice in the state and based upon our prior and current collaborations on community-engaged research, including a pilot community-led air monitoring project funded by ChristianaCare and our current community survey on perceived environmental quality, I believe CHEC, Inc. has the expertise to lead this important project. As the ChristianaCare lead for the Community Engagement and Outreach Core of the Delaware ACCEL Community Translational Research Center and as Director of Community-Engaged Research for our embedded health system research institute I'm happy to lend my expertise in community-engaged research and environmental and population health to this project. I will serve as a member of your Community Air Monitoring Network Steering Committee and also work with you and your collaborators on future grants to combine community air monitoring data with health system data and examine relationships between environmental quality and health.

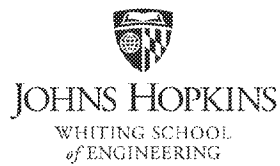
As you know, ChristianaCare is the largest provider of health care in the state and, in addition to our three Delaware hospitals, we have more than 120 primary and specialty care practices throughout Delaware, Pennsylvania, New Jersey and Maryland. In addition to our clinical programs we also have robust community, health equity and population health investments that seek to promote patients and community health. The majority of our patients reside in New Castle County, the region where you'll be establishing your community-led air monitoring. Analyses conducted by my research team at ChristianaCare using existing EPA data indicate disproportionate burdens of environmental and cumulative risks in eastern New Castle County, risks that are associated with greater burdens of chronic conditions and overall poorer health. There is much to do in these regions to address environmental, social and health inequity.

Your proposed project would engage and empower communities that are disproportionately impacted by air pollution to collect, report air quality data in real time and assist with community advocacy efforts to address drivers of poor air quality and improve health and environmental justice. I wish you and your collaborators the best with your application. Please do not hesitate to contact me if I can be of further assistance.

Sincerely,

A handwritten signature in dark ink that reads "Alicia L. Salvatore".

Alicia L. Salvatore, DrPH, MPH (she/her/hers)
Director of Community-Engaged Research, iREACH, ChristianaCare
Affiliated Associate Professor, Human Development and Family Sciences, University of Delaware
ChristianaCare Lead and Clinical and Translational Research Scholar, DE-ACCEL CTR
Alicia.salvatore@christianacare.org



March 9, 2022

Ms. Penny Dryden
Executive Director
CHEC Inc.

Dear Ms. Dryden:

I am writing to express my interest and intent to collaborate in your research project in response to Enhanced Air Monitoring for Communities RFA# EPA-OAR-OAQPS-22-01.

My research group is excited to participate this project and provide assistance to Community Housing& Empowerment Connections Inc. (CHEC). My research group has extensive expertise in measurement and source apportionment of air pollutants in urban areas and has been working with community groups via bi-directional dialogue to install and operate air quality sensors in residential areas without regulatory monitoring in place. We look forward to sharing our experience with CHEC and assisting in the design and implementation of air pollutant monitoring. With respect to data acquisition and translation for community engaged research, we have been operating and processing data from low-cost sensors regularly for over 1 year now and have begun building data processing and visualization tools to summarize the data generated for use by community groups and other non-expert groups. We are excited to collaborate with the CHEC on this work to improve the characterization of pollutants in New Castle County, Delaware.

Sincerely,

Peter DeCarlo, Ph.D.
Associate Professor
Department of Environmental Health and Engineering
Johns Hopkins University

Project Narrative File(s)

* **Mandatory Project Narrative File Filename:**

[Add Mandatory Project Narrative File](#)

[Delete Mandatory Project Narrative File](#)

[View Mandatory Project Narrative File](#)

To add more Project Narrative File attachments, please use the attachment buttons below.

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[View Optional Project Narrative File](#)



DELAWARE HEALTH AND SOCIAL SERVICES
Division of Public Health

OFFICE OF THE DIRECTOR

March 1, 2022

Octavia Dryden
Executive Director
Community Housing & Empowerment Connections Inc.
Ex. 6 Personal Privacy (PP)
Bear, DE 19701

Dear Mrs. Dryden:

The Delaware Department of Health and Social Services (DHSS), Division of Public Health (DPH), supports Community Housing & Empowerment Connections Inc. and the Delaware Environmental Justice Community Partnership in its pursuit of an EPA Enhanced Air Quality Monitoring for Communities grant to purchase low-cost air monitors and establish a Community Air Monitoring Network (CAMN) in New Castle County, Delaware.

A CAMN would engage and empower communities that are disproportionately impacted by air pollution to collect and report air quality data in real time; assist with community advocacy efforts and improve health outcomes related to air pollutants.

Delaware Division of Public Health is able to commit to ensuring that a DPH representative serves on the steering committee, explore additional opportunities for partnership within the CAMN network, provide support with accessing relevant health data, provide technical assistance and support with data analysis, and provide support around data dissemination as deemed allowable.

We highly recommend support of the proposed Community-engaged Air Quality Monitoring in New Castle County Delaware project that will greatly benefit overburdened communities throughout New Castle County to better understand and address air quality issues in their neighborhoods.

Sincerely,

A handwritten signature in cursive script that reads "Cassandra Codes Johnson".

Cassandra Codes-Johnson, MPA
Associate Deputy Director

DELAWARE CONCERNED RESIDENTS FOR ENVIRONMENTAL JUSTICE

March 18, 2022

Octavia Dryden
Executive Director
CHEC Inc.

Ex. 6 Personal Privacy (PP)

Bear, DE 19701

LETTER OF SUPPORT

Dear Ms. Dryden:

The Delaware Concerned Residents for Environmental Justice @CHEC (DCR4EJ) provides this letter of support to Community Housing and Empowerment Connections Inc. and its partners in pursuit of an EPA Enhancing Air Quality Monitoring for Communities grant to implement the *Community-engaged Air Quality Monitoring in New Castle County, Delaware*.

The DCR4EJ @CHEC mission is to empower and inform people of the fundamental rights to clean air, water, land and food. Our group comprised of residents living in close proximity to environmental hazard have identified community air monitoring as central to environmental just. Therefore, we will designate a representative to serve on the Community Steering Committee, assist with recruiting other residents to participate in activities relative to the proposed project. DCR4EJ will promote the project through its environmental justice and community networks.

We highly recommend support for the proposed *Community-engaged Air Quality Monitoring for New Castle County, DE* project that uses a collaborative, community engaged process to develop a community-led air monitoring network and attains the scientific rigor required for research, while also achieving community priorities. This project will greatly benefit overburdened communities in New Castle County to better understand and participate in air quality planning in their neighborhood.

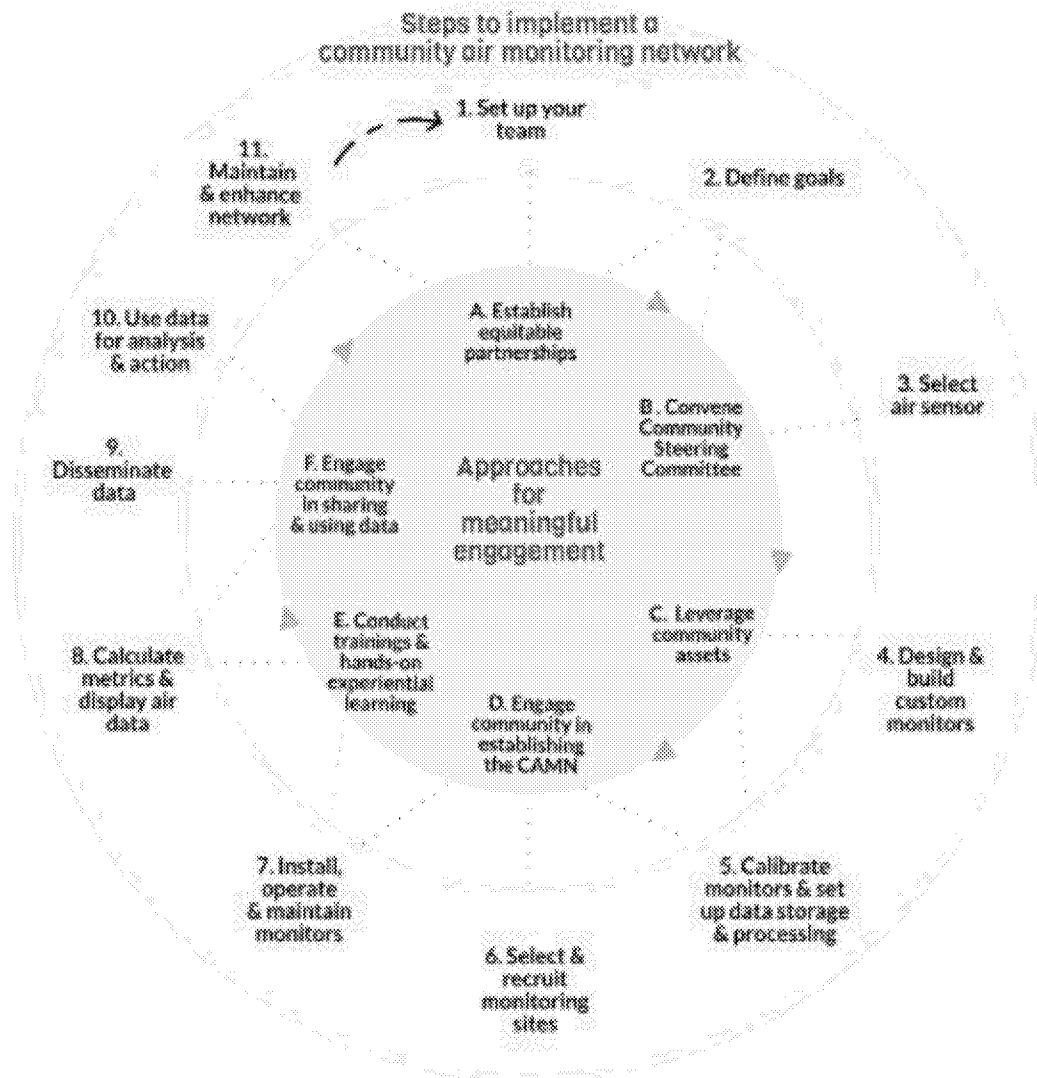
Sincerely,

Amber Edwards

Amber Edwards
Member,
DCR4EJ

STEPS TO IMPLEMENT A COMMUNITY- ENGAGED AIR MONITORING NETWORK

Graph





DELAWARE ENVIROMENTAL JUSTICE COMMUNITY PARTNERSHIP (DEJCP)

FACT SHEET

Statement

Addressing environmental justice and building community power on the frontlines is a top priority of the Community Housing & Empowerment Connections Inc. (CHEC) and its partners of the Delaware Environmental Justice Community Partnership (DEJCP).

[[HYPERLINK "https://www.nbejn.com/nbejn-health"](https://www.nbejn.com/nbejn-health)]

History

The DEJCP [[HYPERLINK "https://www.nbejn.com/our-history"](https://www.nbejn.com/our-history)]

The Delaware Environmental Justice Community Partnership (DEJCP), a collective of community organizations and individuals, is the only statewide organization in Delaware that primarily focuses on climate and environmental justice issues and whose leadership and membership are predominately black women, Indigenous and people of color directly impacted by environmental inequities. With emphasis on amplifying the voices of the most affected individuals, the DEJCP aim to successfully move environmental justice from the margin to the mainstream of environmental policy discussions. The DEJCP has served the Environmental Justice communities by influencing public policy initiatives, advocating for beneficial legislation, providing testimony at public hearings on environmental proposals, and educating about environmental justice through public articles, studies, and presentations over the past three decades.

DEJCP is a state-based multi-level consortium of grassroots community organizations, environmental and social justice groups, expert consultants, government and elected officials working together to effectively prevent, reduce and eliminate environmental and social injustices in Delaware's most vulnerable communities. There are a number of regional and national groups that focus on climate, energy, environmental and social justice across the country seeking alignment with community-led, state-based organizations like DEJCP, but find it difficult to effectively engage, without designated infrastructures. To support the national efforts and fulfill our state goals to effectively engage, educate, empower and employ; and extend climate, environmental and social justice to the most impacted communities in Delaware, Community Housing &

Empowerment Connections Inc. (CHEC) will take the lead in developing and managing the DEJCP.

African Americans are 79 percent more likely than whites to live in neighborhoods with toxic industrial pollution that poses the greatest health dangers. Across the US, Blacks, Indigenous and people of color are organizing their communities to fight back against environmental racism. This fight includes the inadequate resilience to climate change and inequitable assistance in BIPOC communities of color. DEJCP provides BIPOC organizations the unified support to win their fight for environmental justice. We work to make our community level struggles a statewide matter. We do this by creating space for residents, community organization leaders and members to build alliances and connect their work, share resources, and strategically target systemic racism throughout the state.

Our Work

CHEC as the lead agency of the DEJCP, is a community-based non-profit organization with an extensive history in substance abuse and violence prevention programming with special emphasis on environmental justice. It is the mission of (CHEC) to build, healthy, strong, sustainable communities through advocacy, community engagement and partnerships. CHEC was a co-author of the *Environmental Justice for Delaware, Mitigating Toxic Pollution in New Castle County Communities* report in 2017, that highlighted health impacts of toxic pollution in seven black communities in comparison to one elite white community. CHEC implemented several nationally recognized evidenced-based programs; led the development of the Wilmington Prevention Coalition, the New Castle Prevention Coalition; a lead partner of the Delaware Concerned Residents for EJ and currently leading the development of the Delaware EJ Community Partnership and Building Community Power through: Community Air Monitoring Network 4 Delaware, Justice-Oriented Online Mapping Tools and Resource Guide, and Community Justice40 Task Force to monitor and enforce implementation of federal Justice40 Initiative at the community level . The executive director of CHEC most recently served as Co-PI for a ACCEL Sponsored Retreat on *Health Impacts of Toxic Pollution: Developing Community-Engaged Research*, alongside the Director of Neighborhood and Revitalization Office at Delaware State University.

DEJCP works to Build Community Power on the Frontlines through the following projects and priorities areas:

Current Projects:

- Community Air Monitoring Network 4 Delaware (Youth and Healthy Homes Assessments)
- Clean Energy Future 4 All
- Justice-Oriented Online Mapping Tools and Resource Guide
- Neighborhood Youth Messaging Mascots
- Community Justice100 Task Force

Priorities Areas:

- Communication
- Leadership Development
- Advocacy Tools and Training
- Data and Information (Transportation, Public Health
- Relationship and Trust
- Innovative Philanthropy

Our Partners

(CHEC) and its current partners: Sussex Health and Environmental Outreach Project, Minority Workforce Development Coalition, State NAACP Health Committee, Sierra Club-DE Chapter; Clean Air Council, Socially Responsible Agricultural Project, Delaware Concerned Residents for EJ will collaborate in the development of the DEJCP and Coordinating Council to provide a *One Stop Shop* to coordinate social, climate, energy and environmental justice resources, trainings, and associated programs more equitably in Delaware. Other local, regional and national agencies/groups serving as Allies of the partnership are: Christiana Care Health Services, ACCEL, BEA Fund, Union of Concerned Scientists, National Black Environmental Justice Network, DreamCorp/Green for All, Delaware State University and John Hopkins University and many others as appropriate.

Local Partners:

Clean Air Council (The Council), officially created in 1967, is a member-supported environmental organization serving the Mid-Atlantic Region that includes Delaware. The Council is dedicated to protecting and defending everyone's right to a healthy environment. The Council works through a broad array of related sustainability and public health initiatives, using public education, community action, government oversight, and enforcement of environmental laws. By 1970, the Council was recognized by the American Heritage Publishing Company as one of the top 12 conservation organizations in the Nation most worthy of public support. In 1975, the Council developed the first regional air quality reporting system called AIRS. This system was regarded as a model air quality index by the Federal government.

Sussex Health and Environmental Outreach Project (SHEOP), an environmental justice group set up to help disadvantaged communities, communities of color, and in underserved areas in Sussex County deal with environmental and health issues related to contaminated drinking water and air pollution. SHEOP consider this situation to be a public health problem. With that in mind, are looking to connect with community health entities, such as the Healthy Communities Initiative, to address the environmental and related health problems in Sussex County.

Minority Workforce Development Coalition (MWDC) established in 2010, is a group of individuals, community-based organizations, businesses and government agencies working together to advocate for the compliance and enforcement of the Code of Federal Regulation (CFR) to increase fair and equal jobs and economic development opportunities for low income, environmental justice and frontline communities in Delaware. MWDC utilizes the five steps of the strategic prevention framework: assessment, capacity, planning, implementation and monitoring to achieve its goals.

Delaware State Conference NAACP Health Committee-Environmental & Climate Justice program provides toolkits, campaigns and support community leadership in addressing this human and civil rights issue by advocating for three objectives: 1) reduce Harmful Emissions, Particularly Greenhouse Gases; 2) advance Energy Efficiency and Clean Energy and 3) Strengthen Community Resilience and Livability.

Sierra Club-Delaware Chapter (SC) a conservation organization founded by John Muir in 1892 is a subsidiary of one of the nation's largest environmental organizations with more than two million members and supporters. The successes range from protecting millions of acres of wilderness to helping pass the Clean Air Act, Clean Water Act, and Endangered Species Act. More recently, made history by leading the charge to move away from the dirty fossil fuels that cause climate disruption and toward a clean energy economy. The Delaware Sierra Club a statewide membership organization of the national organization with over 1,500 members. The purpose includes working to explore, enjoy and protect the environment here in Delaware and protecting the health of Delawareans from pollution and making a just transition away from fossil fuels and other polluting industries to a clean and fair economy.

Delaware Concerned Residents for Environmental Justice (DCR4EJ) is an collective of environmental justice community residents whose mission to is to inform and empower communities to take action to protect the fundamental rights to clean air, water, land and food.

The group operates based on the six Jemez Principles of Environmental Justice that include: Inclusive, Bottom-Up Process, Speak for Ourselves, Work in Solidarity, and Self Transformation.

Socially Responsible Agricultural Project (SRAP) works to help communities across the U.S. replace industrial livestock production with ecologically sound, socially equitable, and economically viable animal agriculture. SRAP informs and educates the general public about the negative effects of concentrated animal feeding operations (CAFOs)—also known as factory farms—while working directly with U.S. communities impacted by this destructive form of industrial animal agriculture. Through public education, issue advocacy, and local community organizing, SRAP empowers rural residents to protect their public health, environmental quality, natural resources and local economies from the damaging impacts of factory farms.

Delaware State University, Center for Neighborhood Revitalization and Research

bridges the research practice gap by serving as a practicing academic partner with communities, nonprofit and other social service providers, and government agencies involved in community and neighborhood revitalization. The work is guided by three primary goals:

1. Developing mutually beneficial research partnerships designed to advance and sustain neighborhood vitality by invigorating the culture and the economy.
2. Providing student service learning, internships and research opportunities aimed at preparing graduate and undergraduate students with the knowledge, skills and experiences necessary to be the first choice of employers.
3. Supporting faculty research designed to help solve real-world problems.

National Partnership Efforts:

A recent study, *Environmental Justice for Delaware, Mitigating Air Pollution in New Castle County Communities*, a collaborative with Community Housing & Empowerment Connections Inc. (CHEC), Delaware Concerned Residents for Environmental Justice (DCR4EJ), Union of Concerned Scientists (UCS), Coming Clean (CC) and Environmental Justice Health Alliance (EJHA), have found that people of color and those living in poverty are exposed to higher levels of environmental pollution than Whites or people not living in poverty. Studies have also found that, compared to national averages, a significantly greater percentage of Blacks (African Americans), Latinos (Hispanics), and people at or near poverty levels tend to live near major highways, ports, industrial facilities that use large quantities of toxic chemicals and present a risk of major chemical disasters with potentially severe health consequences for residents in nearby communities. Environmental justice requires attention to, and actions to address, the disproportionate health and other quality-of-life impacts on these communities. This harm is amplified by the cumulative impacts from other negative socioeconomic and health factors, such as the lack of access to health care, public transportation, and healthy foods; poor housing conditions; and stress from unemployment, poverty, and crime, among the other exacerbating factors in systemic racism and Covid-19.

Additionally, The NAACP's Environmental and Climate Justice Program, in partnership with the Clean Air Task Force and with support from the National Medical Association, developed the study, *Fumes Across the Fence-Line: The Health Impacts of Air Pollution from Oil and Gas Facilities on African American Communities*. The report highlighted the life-threatening burdens placed on communities of color near oil and gas facilities are the result of systemic oppression perpetuated by the traditional energy industry, which exposes communities to health, economic, and social hazards. Communities impacted by oil and gas facility operations remain affected due to energy companies' heavy polluting, low wages for dangerous work, and government lobbying against local interests. The nature of the vulnerability of African American and other person of color fence-line communities is intersectional--subject to connected systems of discrimination based on social categorizations such as race, gender, class, etc.

Environmental Justice is defined as: Equal and fair distribution of environmental burdens and benefits to all people and communities, regardless of race, gender, income, age or where you live, work, play or learn.

Environmental problems manifest in local communities and show up in our schools, churches, playgrounds, and in our homes.

Goals:

Through the Delaware Environmental Justice Community Partnership, local youth, parents, schools, businesses, faith-based organizations, and other community stakeholders may access resources and achieve equity and environmental justice where they live. The DEJCP shall collaborate with local and national organizations to obtain two primary goals:

1. Establish and strengthen collaboration among community residents, academics, climate, energy and environmental groups; as well as federal, state, local, and tribal governments to support the efforts of environmental justice and associated problems through partnerships.
2. Prevent, reduce and/or mitigate environmental pollution in low income, communities of color, and over time, the public at large with 100% emissions reductions targets by addressing the factors in a community that increase health risks and promote factors that minimize those risks.

Organizational Structure:

The Delaware Environmental Justice Community Partnership, functions as a statewide EJ infrastructure to effectively resource community stakeholders in Delaware most vulnerable communities. Our members are constituency of the communities we serve. Each group and/or sectors retains its identity, but all agree to work together toward a common goal of building a statewide, accessible resource hub to engage and inform EJ communities in Delaware. **The structure of DEJCP operates as a Coordinating Council to serve as the decision-making body for the Partnership. As the lead agency, CHEC will house the DEJCP project's resource center and website; interns from local colleges/universities will serve as support staff for the project; and four county-level EJ Ambassadors will lead the development of EJ community coalitions in each county (Wilmington, New Castle, Kent and Sussex).** Participants of the DEJCP are expected to share information at the county level and work with stakeholders within their communities to identify and address local environmental problems and create sustainable community-level change through education, programs/policies and partnerships.

Now, more than ever, DEJCP is necessary to provide a system of pertinent and accessible social and environmental resources for impacted residents; assist local leaders to organize and identify the environmental issues unique to their communities and tools to effectively prevent, reduce and mitigate impacts of environmental pollutants at all levels throughout the state.

DEJCP Coordinating Council Requirements include a) partnership/coalitions must be located and comprised of members working/residing in underserved communities where disproportionate burdens of environmental pollution occur; b) partnership/coalitions shall be comprised as follows:

- 4 residents of an environmental justice community,
- 4 county level representatives,
- 4 representatives of environmental justice organizations,
- 1 representative of a college/university
- 1 statewide elected official,
- 1 environmental legal representative
- 1 public health representative,
- 1 representative of an environmental protection agency,
- 1 community environmental justice Lead Agency/Director

While the partnership requires representation as identified above, there are a number of other ally groups associated with the partnership.

Development of DEJCP founded and led by:
Penny Dryden, executive director of CHEC Inc.,
January 2019

BIOGRAPHICAL SKETCH

NAME: Dryden, Octavia "Penny"

EMAIL: Drydenp2015@gmail.com

POSITION TITLE: Executive Director

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Delaware State University, Dover DE.	B.A.	05/1979	Business Administration
Certified Prevention Specialist, DSAMH Newark, DE		11/2011	Substance Abuse Prevention
Certified FAST Trainer		02/1999	
Licensed Prevention Provider, DSAMH		07/2004	
Certified Life Skills Training Instructor		07/2004	

A. Personal Statement

I embrace the opportunity to serve as Project Manager and Lead Agency for the proposed *Enhanced Air Quality for Delaware Communities* under EPA Grant program. I am currently the executive director of Community Housing & Empowerment Connections Inc. and former executive director of the New Castle County Community Partnership, both combined for a total of thirty plus years of experience in the environmental and social justice field. I have an extensive background in community partnership, capacity and coalition building that led to the development of 10 neighborhood coalitions (Edgemoor, Southbridge, Northeast Wilmington, Westside Wilmington, New Castle, Newark, Middletown/Odessa/Townsend and Route 40 Corridor), 2 countywide coalitions (Wilmington Prevention Coalition and New Castle Prevention Coalition) and 2 statewide community partnerships (Delaware Environmental Justice Community Partnership and Delaware Concerned Residents for EJI recently served as Community Co-PI for a ACCEL Retreat grant and previous PI for a federal Center for Substance Abuse Prevention (CSAP) grant to build a bi-level substance abuse prevention infrastructure statewide. I managed the implementation of a federal CSAP Drug Free Communities Grant and Community Coalition Grant Program to implement a nationally recognized substance abuse prevention program (FAST) in two neighborhood coalitions in New Castle County, DE.). Recently, led implementation of a pilot Partnership 4 Air Quality with partners at Christiana Care Health Services and John Hopkins University. I possess the necessary leadership, expertise and training to successfully achieve the aims outlined in the proposed project.

B. Positions and Honors

1986 – 2008 Executive Director, New Castle County Community Partnership Inc.
2001 – Present Executive Director, Community Housing & Empowerment Connections Inc.
2018 – Present Chair, Delaware Environmental Justice Community Partnership
2019 – Present Chair, Delaware Concerned Residents for Environmental Justice
2019 – Present Member, Delaware State NAACP Health Committee

C. Contributions to Science

- Community Co-PI for Delaware CRT ACCEL Retreat *Health Impacts of Toxic Pollution: Developing Community Engaged Research* to bring community and researchers together for discussion and development of ideas and partnerships.
- Co-author of the *Environmental Justice for Delaware-Mitigating Toxic Pollution in New Castle County Communities* report (2017) with Union of Concerned Scientists, Environmental Justice Health Alliance, Delaware Concerned Residents for EJ, Coming Clean and Community Housing & Empowerment Connections Inc. This report studies the health risks for seven communities located along an industrial corridor in the northern portion of Delaware's New Castle County. These communities have higher percentages of people of color and/or higher poverty levels than the Delaware average. We found that people in the seven communities face a substantial cumulative health risk from exposure to toxic air pollution and their proximity to polluting industrial facilities, hazardous chemical facilities, and contaminated waste sites. These health risks are substantially greater in comparison to those of a predominantly White and affluent Delaware community as well as Delaware as a whole. Significant and expedited improvements in regulatory and public policy are needed at the national, state, and municipal levels to address these issues.
- Findings from the EJ report influenced Resolution 19-065 sponsored by City of Wilmington City Council Resolution to urge DNREC to consider Cumulative Impacts on environmental justice communities and health risks when issuing construction permits to industrial facilities that impact air quality.

D. Additional Information: Research Support and/or Scholastic Performance

- Presenter at the Earthjustice Hearing in Washington DC
- Testify before the U.S. Environmental Protection Agency Administrators to prevent roll backs of Regulations that protect communities against chemical disasters.
- Testify before the National Environmental Justice Advisory Council to protect against roll backs.
- Member of ACCEL CEO Community Advisory Council
- Member of the State NAACP Health Committee
- Former Member of Delaware Prevention Coalition
- Former Chair of Wilmington Prevention Coalition
- Former Member of Community Anti-Drug Coalition of America-CADCA
- Former Member of Delaware SPF-SIG Advisory Council
- Former Member of Weed and Seed Advisory Council
- Former Member of Delaware Criminal Justice Advisory Council

Congress of the United States

Washington, DC 20510

March 24, 2022

Michael S. Regan
Environmental Protection Agency
Mail Code 1101A
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

RE: Enhanced Air Quality Monitoring for Communities

RFA NUMBER: EPA-OAR-OAQPS-22-01

Dear Administrator Regan:

We are writing to express our strong support for the proposal submitted by Community Housing & Empowerment Connections (CHEC) a grant to support “enhanced air quality monitoring for communities.”

CHEC and its main partner, John Hopkins University seek funding from the EPA Enhanced Air Quality Monitoring Grant program to implement a *Community-Engaged Air Quality Monitoring in New Castle County, Delaware* that uses a collaborative, community engaged process to develop a community led air monitoring network that attains the scientific rigor required for research, while also achieving community priorities. By engaging community residents in the project design, monitor siting processes, data dissemination, and other key activities, the resulting air monitoring network data will be relevant, trusted, understandable, and used by community residents.

We appreciate your time and consideration of this proposal and ask that you contact us once a decision is rendered. Should you have any questions, we can be reached through our respective staff members Larry Windley in Senator Carper’s office at (302) 674-3308, Andrew Dinsmore in Senator Coons’ office at (302) 573-6345, and Iris Turner in Congresswoman Blunt Rochester’s office at (202) 225-4165.

Sincerely,



Thomas R. Carper
United States Senator



Christopher A. Coons
United States Senator



Lisa Blunt Rochester
United States Representative

Matthew S. Meyer
County Executive



Richard E. Hall, AICP
General Manager

Department of Land Use

March 15, 2022

Octavia Dryden
Executive Director
Community Housing & Empowerment Connections Inc.
Ex. 6 Personal Privacy (PP)
Bear, DE 19701


To Whom it May Concern:

The New Castle County Department of Land Use supports Community Housing & Empowerment Connections Inc. (CHEC) and its main partner, John Hopkins University in their pursuit to seek funding through the EPA's Enhanced Air Quality Monitoring for Communities grant. This grant will allow CHEC to establish a program to implement a Community-Engaged Air Quality Monitoring in New Castle County, Delaware that uses a collaborative, community engaged process to develop a community-led air monitoring network and attains the scientific rigor required for research, while also achieving community priorities. By engaging community residents in the project design, monitor siting processes, data dissemination, and other key activities, the resulting air monitoring network data will be relevant, trusted, understandable, and used by community residents.


We support CHEC's effort to expand air quality monitoring throughout environmental justice communities. New Castle County is currently in the process of adopting the 2022 New Castle County Comprehensive Plan, which is required by Delaware State Law to be updated every ten years. Through the public process, Environmental and Social Justice and specifically air quality, were identified by the public as a major area of concern. In order to address and further understand these concerns air quality monitoring will be crucial. A community lead effort to monitor air quality will not only empower Environmental Justice Communities by allowing them to be a part of the process, but it will also provide much needed on-the-ground data that may be missed using conventional methods. In our capacity, the Department of Land Use commits to support CHEC in its efforts to gather and distribute air quality information to our residents as an additional mechanism to improve air quality and protect public health.

Sincerely,

Richard E. Hall, AICP
General Manager
New Castle County Department of Land Use

 **IRS** Department of the Treasury
Internal Revenue Service
P.O. Box 2508
Cincinnati OH 45201

In reply refer to: 0248459777
Dec. 22, 2008 LTR 4168C EQ
51-0411465 000000 00 000
00017790
BODC: TE

 COMMUNITY HOUSING & EMPOWERMENT
% OCTAVIA DRYDEN
20 MOONLIGHT CT
NEWARK DE 19702-8620203

024260

Employer Identification Number: 51-0411465
Person to Contact: Mrs. Guilkey
Toll Free Telephone Number: 1-877-829-5580

Dear Taxpayer:

This is in response to your request of Dec. 11, 2008, regarding your tax-exempt status.

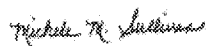
Our records indicate that a determination letter was issued in November 2001, that recognized you as exempt from Federal income tax, and discloses that you are currently exempt under section 501(c)(3) of the Internal Revenue Code.

Our records also indicate you are a private foundation described under section 509(a) of the Code.

Donors may deduct contributions to you as provided in section 170 of the Code. Bequests, legacies, devises, transfers, or gifts to you or for your use are deductible for Federal estate and gift tax purposes if they meet the applicable provisions of sections 2055, 2106, and 2522 of the Code.

If you have any questions, please call us at the telephone number shown in the heading of this letter.

Sincerely yours,



Michele M. Sullivan, Oper. Mgr.
Accounts Management Operations I



17 March 2022

Octavia Dryden
Executive Director
Community Housing & Empowerment Connections Inc.

Ex. 6 Personal Privacy (PP)

Bear, DE 19701

RE: *Community-engaged Air Quality Monitoring in New Castle County, DE* – Letter of Support

Dear Mrs. Dryden:

On behalf of Community Engagement & Outreach Core of the Delaware-CTR (Clinical and Translational Research) ACCEL program, I am happy to give this letter of support to Community Housing & Empowerment Connections Inc. (CHEC) in their application for *Community-engaged Air Quality Monitoring in New Castle County, Delaware* in response to the EPA: Enhancing Air Quality Monitoring for Communities grant program.

The Community Engagement & Outreach (CEO) Core of the Delaware-CTR ACCEL Program mission is to make research more impactful and responsive to community needs by expanding the work of our initiative and through the accomplishment of three specific aims: 1) give voice and priority to the needs of our communities and patients; 2) integrate community engagement ubiquitously across all ACCEL research components; and 3) create and nurture teams that incorporate community engaged research (CEnR) values.

Our program has benefited from collaborating with you. Your leadership in planning and facilitating the ACCEL research retreat on toxic pollution and environmental justice is one example of how we have collaborated to assure that research conducted in Delaware is responsive to the needs and priorities of its communities and citizens. The present project for which this letter is in reference to is another example of how your organization is advocating for such engagement.

Therefore, we strongly support CHEC's pursuit of a grant to implement a community-engaged process to develop a community air monitoring network and attain the scientific rigor required for research, while also achieving community priorities. We look forward to linking the critical



ChristianaCare





process of research to the creative process of dissemination, implementation, and policy to this project.

Sincerely,

A handwritten signature in black ink, appearing to read "Lee Pachter".

Lee M. Pachter, DO
Community Engagement & Outreach Core Lead; Delaware-CTR ACCEL
Senior Physician Scientist
Director, Mentorship & Professional Development
iREACH: Institute for Research on Equity & Community Health; Christiana Care Health System
Professor, Pediatrics & Population Health, Thomas Jefferson University



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND
ENVIRONMENTAL CONTROL
DIVISION OF AIR QUALITY
STATE STREET COMMONS
100 W. WATER STREET, SUITE 6A
DOVER, DELAWARE 19904

DIRECTOR'S
OFFICE

PHONE
(302) 739-9402

March 21, 2022

Octavia Dryden
Executive Director
Community Housing & Empowerment Connections, Inc.

Ex. 6 Personal Privacy (PP)

Bear, DE 19701

Dear Mrs. Dryden,

The Delaware Department of Natural Resources and Environmental Control (DNREC), Division of Air Quality (DAQ), supports Community Housing & Empowerment Connections, Inc. and the Delaware Environmental Justice Community Partnership in its pursuit of the U.S. Environmental Protection Agency's (EPA) Enhanced Air Quality Monitoring for Communities grant to purchase low-cost air monitors and establish a Community Air Monitoring Network (CAMN) in New Castle County, Delaware.

DAQ has participated in the steering committee for the development of the CAMN and looks forward to continued participation as the CAMN continues to be deployed. The development of a CAMN will engage and empower communities to have their voices heard regarding improved health outcomes related to air pollution. DAQ has also applied for funding via this grant program to establish stationary supportive monitoring to compliment the CAMN monitoring in an underserved community in New Castle County, Delaware.

Sincerely,

A handwritten signature in black ink that reads "AMarconi".

Angela Marconi, P.E.
Director, Division of Air Quality



Enhanced Air Quality Monitoring for Communities

RFA NUMBER: EPA-OAR-OAQPS-22-01

PROGRAM NARRATIVE

I. Cover Page:

- Project Title: Community-Engaged Air Quality Monitoring in New Castle County, Delaware
- Applicant Information: Community Housing & Empowerment Connections Inc. (CHEC)
Address: [Ex. 6 Personal Privacy (PP)] Bear, DE 19701
Primary Contact: Octavia Dryden,
Phone Number: [Ex. 6 Personal Privacy (PP)]
Email address: [HYPERLINK "mailto:[Ex. 6 Personal Privacy (PP)]"]
Duns Number: 826231800
- Set-Aside: community-based organization set-aside. CHEC is lead agency of this project; Delaware Concerned Residents for EJ; and the Delaware EJ Community Partnership representing disproportionately impacted communities in New Castle County, Delaware.
- Brief Description of Applicant Organization: CHEC is a community-based nonprofit organization led by Black Women from the communities that they serve to address social and environmental injustices through education, advocacy, and partnerships.
- Project Partner(s): Peter DeCarlo PhD, Associate Professor, Department of Environmental Health and Engineering at John Hopkins University
- Project Location: New Castle County, Delaware communities: Belvedere, Oakmont, Rosegate, Southbridge, Rutledge, Meridian Crossing and Northwest/Northeast Wilmington
- Air Pollutant Scope: Particulate Matter 2.5 and 10
- Budget Summary:

EPA Funding Requested	Total Project Cost
\$357,852	\$357,852

- Project Period: October 2022-September 2024
- Short Project Description: This project aims to utilize a collaborative process that engage residents in the development of a community air monitoring network that achieves community priorities while supporting research, public policy and improved health outcomes in New Castle County, Delaware.

Section 1. – Project Summary and Approach

Air pollution continues to be a national public health threat, and the expanding availability of small, low-cost air sensors has led to increased interest in both personal and crowd-sourced air monitoring. However, to date, few low-cost air monitoring networks have been developed with the scientific rigor or continuity needed to conduct public health surveillance and inform policy. We propose a collaborative, community-engaged process to develop a community air monitoring network that attains the scientific rigor required for research, while also achieving community priorities. While we focus on seven high risk communities in New Castle County, Delaware—Belvedere, Rutledge, Meridian Crossing, Rosegate, Oakmont, Southbridge and Northeast /Northwest Wilmington—other nearby environmentally-impacted communities face similar risks.

By engaging community residents in the project design, monitor siting processes, data dissemination, and other key activities, the resulting air monitoring network data are relevant, trusted, understandable, and used by community residents. Integration of spatial analysis and air monitoring best practices into the network development process ensures that the data are reliable and appropriate for use in research activities. This combined approach results in a community air monitoring network that is better able to inform and engage community residents, support research activities, guide public policy, and improve public health. Below we provide the overall description of the monitor siting process and outline the significance and challenges of this approach.

A. Overall Project

New Castle County is the northernmost of the three counties of the state of Delaware. As of the 2020 census, the population was 570,719, making it the most populous county in Delaware, with just under 60% of the state's population of 989,948. There were 138k Black or African American (Non-Hispanic) and 38,5k White (Hispanic) residents. The county has a total area of 494 square miles (1,280 km), of which 426 square miles (1,100 km) is land and 68 square miles is water.

Environmental quality, including air quality, is an important social determinant of health. Exposure to air pollution is associated with multiple adverse health effects including increase risks of respiratory illness, hypertension, cardiovascular disease, cancer, pre-term birth and, most recently, increased mortality risk associated with COVID-19. Low-income, Black, people of color, children, the elderly, pregnant women, and those with existing health conditions are especially vulnerable to air pollution and its adverse health impacts. Nonetheless many of the communities identified in this project are chronically exposed to poor air quality.

A recent analysis (*Environmental Justice for Delaware: Mitigating Toxic Pollution in New Castle County Communities*) of our project communities, located along industrial and highway corridor, demonstrates disproportionately poorer environmental exposures than the community of Greenville (85% white: 4% poverty). These exposures include poor air quality, high levels of Environmental Protection Agency (EPA) respiratory hazards and carcinogenic chemicals and

substantial exposure to particulate matter from vehicles and industrial source. Not surprisingly, our communities have high rates of asthma, cancer, and other comorbidities. Compared to Greenville and to the state of Delaware overall, our communities suffer multiple disparities. We have significantly higher EPA respiratory hazard values than Greenville (range: 24%-71% higher) and the state overall (range: 13%-55% higher). As a result, our communities are placed at higher risk for respiratory illnesses, cardiovascular conditions, cancer, pre-term birth, COVID-19, as well as higher morbidity and mortality.

New Castle County has minimal regulatory PM monitors to cover 570,000 residents in approximately 500 square miles. This regulatory network does not allow many residents to understand their local air quality, and its data are of limited use in identifying air pollution hotspots or examining other local trends. Furthermore, there has been historical mistrust of government air quality data by the BIPOC community, primarily driven by observed disconnects between the reported air quality and what residents experience, compounded by a perceived lack of access to the data. Examples shared by community members include the standard practice of removing data for high pollution “exceptional events” (such as gas leaks) from regulatory datasets, as well as reported instances when regulatory monitors were offline or did not report very high PM levels when the air quality at those monitoring locations was poor enough to obscure visibility.

To meet New Castle County community residents needs for relevant, trusted, community-level air quality data, Community Housing & Empowerment Connections Inc. (CHEC), a community-based organization, and its main partner at the John Hopkins University (JHU) is proposing the *Community-Engaged Air Quality Monitoring Project*. The project seeks funding from the U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA): Enhanced Air Quality Monitoring for Communities: RFA NUMBER: EPA-OAR-OAQPS-22-01 to utilize components of the Imperial County model of community engagement and participation approaches and air monitoring best practices to establish a community air monitoring network (CAMN) of 20 PM monitors in New Castle County, Delaware. The goal of the network is to provide residents with accurate, real-time data on air quality in their communities that could also be used in scientific analysis to identify local trends and hotspots. This model focuses on the project’s innovative monitor siting methodology, which utilizes a phased approach that integrates a collaborative community process that’s community-led to identify and select monitor sites, a monitor calibration and validation process, and spatial analysis as mechanisms to integrate community and scientific priorities into the design of the network.

B. Project Significance

Millions of people worldwide die prematurely every year as a result of outdoor air pollution. In particular, exposure to particulate matter (PM) has been found to be associated with an increased risk of mortality and excess hospitalization even at levels below regulatory limits. While governmental regulatory air monitoring plays an essential role in achieving air quality goals, the monitors used are expensive and require a high degree of training to operate and maintain. The resulting data typically have low geospatial resolution due to the sparseness of monitors, thus limiting their utility for understanding real-time, local-level air quality conditions. While the application of spatial interpolation techniques to regulatory monitoring data has been used to estimate air quality in locations without monitors, a greater number of air monitors distributed

throughout an area of concern will improve a model's utility for identifying air pollution hot spots and characterizing local community exposures. Finally, despite being generated by high-quality monitors using federally-approved methods, regulatory air monitoring data may not be relevant, trusted, or understood by residents.

With the increasing availability and quality of small, low-cost air sensors, many public health and research projects are now employing next-generation air monitoring technology to conduct personal and local-level air monitoring. While not approved in the United States for use in regulatory monitoring, this new technology holds great potential for addressing gaps in regulatory air monitoring data to better characterize air quality at the community level. Yet, few projects have attempted to establish a permanent community air monitoring network that's community-led and produces data that will address community information needs and support scientific research.

By involving our residents in decision-making, conducting transparent and inclusive activities, demystifying scientific processes, integrating community knowledge, and facilitating relationship-building, a community-engaged approach to research and other data collection activities can increase community trust, understanding, and use of the resulting data. As applied to air quality monitoring, a community-engaged approach may involve communities in determining research topics and study design, collecting data, conducting analysis, and interpreting and disseminating results to improve environmental and health outcomes. Early examples of community engagement in air monitoring involved grab sampling—taking a single sample within a short period of time—and were not intended for sustainable and continuous public health surveillance. There are also many examples of communities participating in the initiation, design, and/or implementation of efforts to monitor air pollution near specific sources, also known as fence-line monitoring. However, apart from a few case studies, communities have not traditionally been engaged in the design of community air monitoring networks, proposed here as the distributed installation of monitors to measure ambient air quality levels within geographic communities. Instead, community air monitoring networks are often developed by siting monitors at locations of convenience or in locations selected without community consultation, resulting in monitoring data that are of limited utility for researchers or residents, respectively.

The siting of monitors in a network has important implications for the utility of the resulting data. Broadly speaking, data from monitors placed where people live and are most concerned about air quality are most useful for community needs, while data from monitors that are spread out and placed in a variety of land uses are most useful for modeling the spatial pattern of air quality using land use regression methods. Arguably important for both uses, data quality can be assured by incorporating air monitoring best practices, such as validation, quality assurance, and quality control procedures. However, to our knowledge, there has not been a community air monitoring network implemented at a county-wide scale that addresses these diverse priorities, our community seek. In this novice methodology, the activities of the project are designed and implemented by our community, therefore will be described in more detail under community engagement below.

Section 2. Community Involvement

A. Community Partnerships:

In order to ensure meaningful community participation, the first step will be to build upon an existing community partnership and engagement structure to guide the project. Community Housing & Empowerment Connections Inc., a community-based nonprofit organization will serve as the lead agency, primary role to manage the project initiation and provide a strong community foundation. A recent collaboration with Christiana Care to implement a pilot air monitoring project has set the foundation for CHEC and its partners to hit the ground running with a county-wide community-engaged air monitoring network that's community-led. Next, the existing Community Steering Committee (CSC)—consisting of concerned residents, local advocates, and youth will contribute additional guidance, participation, and decision-making in key activities throughout the project. A broader group of residents will be convened to contribute their community-specific knowledge and perspectives to the project, including the site selection process. Other stakeholders will be engaged through a technical advisory process, comprised of air monitoring experts from the local regulatory agency, the DNREC, the US EPA, and other local government agencies. More in-depth technical guidance and quality assurance will be provided by consultants at John Hopkins University.

B. Community Engagement:

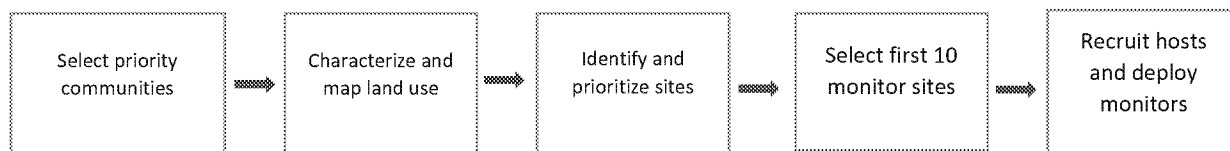
Meaningful community engagement is central to all steps of developing a Community Air Monitoring Network. Under the proposed project, Community residents and other stakeholders serve on the Steering Committee making decisions, on project design and hosting monitors to selection of priority communities.

Our project community-engaged process is illustrated in the accompanying graphic (SEE Optional Other Attachments: Steps of CAMN and Community Engagement Graph).

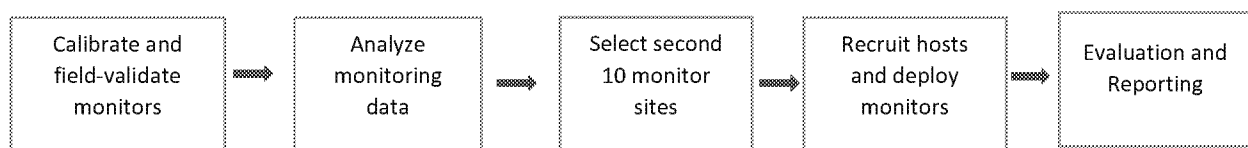
Deployment of Monitors in Stages

The project team will use a staged approach to deploy the monitors (see diagram below). In Phase 1, the first set of 10 monitors will be deployed at sites selected through a community engaged process. In Phase 2, a second set of 10 monitors will be deployed based on the results of preliminary monitoring data from Phase 1. This staged approach ensures that community priorities for monitoring locations could be met in Phase 1, and that Phase 2 could be used to fill in any geographic gaps in data collection to ensure scientific integrity of subsequent spatial modeling conducted with the data.

Phase 1



Phase 2



Phase 1: Community Process to Select the First Set of Monitoring Sites

Selection of priority communities. In May 2023, the CSC will begin the monitor siting process, in which monitor placement would be a priority due to the vulnerability of the residents to air pollution and health impacts. First, the CSC will review community survey data (collected from pilot CAMN project), county-specific maps and tables of various environmental, health, and social indicators, and consider factors that impact personal and community vulnerability to air pollution and covid-19. The CSC will then use consensus voting to select the priority communities.

Land use characterization. To ensure that data from the Phase 1 monitors sites could be used to model PM concentrations (to inform Phase 2), it is important that the first set of sites represent diverse land uses and potential air pollution sources. Environmental priorities related to air pollution will be identified and ranked by the CSC. Based on prioritization, researchers will compile spatial data on land uses, stationary air emissions, crematoriums, roadway proximity, railroads, solar plants, vehicle emissions, vehicle-related dust (e.g., off-roading), and ports. The CSC will also recruit expertise from the public health department to provide input on community vulnerability factors, and spatial data on demographic variables and health outcomes, such as asthma and covid -19 were compiled as well.

Identification and prioritization of potential sites. In January 2024, residents from the priority communities will be recruited to participate in a 2 -day training process to identify and prioritize potential air monitoring sites in their communities. On the first day, participants will learn about air monitoring, uses of air quality data, and considerations for monitor siting. Participants will be grouped by community to (1) review maps of their community; (2) consider who in their community is most vulnerable to air pollution, where an air monitor would be most useful, and how the monitoring data might be used; and (3) create a list of potential air monitoring sites based on these considerations. Participants will not be limited in the number of sites they could identify, and consensus may not be required for a site to be considered a potential site.

The following day, the community participant groups will visit their respective candidate sites. With training from the previous day, groups will assess site characteristics (such as building height, security, likelihood of available Wi-Fi and AC power supply, and locations of nearby air pollution sources), take photos or videos of the site using a mobile device, and report this information on a custom-designed mobile web form (see Figure 2) modified from, CHEC's existing community environmental reporting website. Smartphones will be provided when needed, along with paper forms as back-ups. Each group will submit one mobile web form per site. Once all forms are completed, the participant groups will review their reports and select three priority monitor sites for their community.

Selection of Phase 1 monitoring sites. Of the 10 monitors to be deployed in Phase 1, one will be set aside for colocation with a state regulatory monitor (operated by DNREC) and another will collocate with a non-regulatory monitor to allow researchers to assess data quality of the CAMN instruments. Sites for the remaining 10 monitors will be selected by the project team from the entire list of potential sites and will be guided by two requirements. First, at least one monitor should be placed in each of the identified priority communities, with the larger communities of New Castle County receiving at least two monitors. This will ensure that each priority community would have community-specific data. Second, each of the PCA region types should be represented at least once in the final set of 10 monitors. This will ensure that monitoring data could be used to conduct a land use regression in Phase 2.

Site recruitment. Recruitment of air monitoring sites will begin March 2024. Site-specific contact methods will be used, such as formal letters, introduction through a trusted intermediary, or a cold visit. Multiple meetings, sometimes with different individuals (e.g., business owners, schools, etc.), may be required for each site. A factsheet will be provided to each site describing the project, the air monitors, and the requirements and benefits of hosting a monitor. CHEC will then co-sign a form with each site representative that will confirm permission for CHEC staff to install a monitor at the location and, with reasonable notice, gain access to the monitor to perform maintenance and repairs. If a site declines participation, an alternate site will be contacted.

Deployment of Phase 1 monitors. The Quant AQ and, Purple Air commercially available monitors currently used and to be used for the project, will provide continuous PM monitoring and/or modifications as necessary. The monitors will include a protective shelter, where necessary, that does not inhibit measurements. At the sites, monitors may be installed on porches, fences or the unobstructed sides of buildings, higher than 3 feet above the ground. Monitors will be connected to AC power and to the Internet via that site's own internet service or, with solar power as available. Data will be delivered via the Internet to John Hopkins University (JHU) servers.

Phase 2: Selection of Monitoring Sites Based on Data Analysis

Monitor calibration and field validation. To ensure data quality, each of the monitors will be calibrated and field validated against both PM_{2.5} and PM₁₀ federal equivalent method (FEM) beta-attenuation monitors (BAMs) and federal reference method (FRM) gravimetric filters at a colocation site in the project area. The Quant AQ monitors are designed to make the most accurate measurements possible using low-cost sensor technology. We will rely on the calibration and Quality Assurance/Quality Control QA/QC of these sensors as delivered from the manufacture as a first level of QA/QC. Comparisons across monitors, and with regulatory measurements will also be performed periodically.

Spatial analysis of preliminary air quality data. To determine where Phase 2 monitors should be placed, a preliminary map of air pollution concentrations across the county will be utilized or developed by a spatial expert of one of our CSC partners, as needed.

Site selection and deployment of Phase 2 monitors. In May 2024, the project team and CSC members will examine the proposed Phase 2 monitor locations using results of surveys to identify potential monitor sites. A formal site selection process may or may not be used. CHEC and

interested CSC community members may visit locations to identify and recruit monitoring sites, ideally within a two-mile buffer of the proposed location.

C. Community-based Organization Set-aside:

Community Housing & Empowerment Connections Inc. has more than thirty years of experience leading projects in EJ communities in Delaware, both personally and professionally, therefore is authorized to lead the proposed project. CHEC is a community-based nonprofit established in 2001 to build, safe, healthy and strong communities through advocacy, education, empowerment and community partnerships. We are the constituency that we serve. CHEC led the development of several coalitions that include: the Wilmington Prevention Coalition, the New Castle Prevention Coalition, Delaware Concerned Residents for EJ and currently chair the Delaware Environmental Justice Community Partnership. Co-authored the *Environmental Justice for Delaware: Mitigating Toxic Pollution in New Castle County Communities* report in 2017. CHEC recently led a pilot community Air Monitoring Network for EJ communities in New Castle County, Delaware with Christiana Care Health Services.

(SEE Mandatory Other Attachments: IRS Letter)

(SEE Optional Other Attachments: CHEC Description, DEJCP Partnership Factsheet and EJ for Delaware Report)

Section 3. - Environmental Justice and Underserved Communities

The USEPA defines Environmental justice as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

While measuring pollution and addressing the multiple health impacts, exacerbated by covid-19 alone won't resolve the inequities our communities face, this data can support and further environmental justice and actions through the Justice 40 Initiative to confront air pollution and inform state and federal investments where they will have the largest benefits to health and obtaining equity.

The proposed *Community-engaged Air Quality Monitoring* and methodology used to site monitors addresses several barriers that environmental justice advocates and BIPOC face in meeting community needs. Specifically, regulatory monitoring networks are sparse, often do not have monitors in locations of most relevance to low income, Black, Indigenous communities of color, and not trusted by the community members. The increased availability of small, low-cost air sensors now makes it feasible for researchers to establish denser networks. However, without community input and engagement, the resulting data may still be of limited utility and may lack credibility within the BIPOC communities identified in this project. Community-led monitoring efforts are more likely to be trusted and relevant for communities; yet these efforts are often under-resourced, with limited access to scientific expertise or conventional monitoring equipment for colocations, resulting in monitoring data that may not achieve the level of scientific rigor or research utility that the community desires. Under this proposed project, our siting methodology is distinguished by the deliberate integration of community and scientific priorities. In fact, the

conceptual separation of these priorities did not match our experience. Community participants consistently emphasized the importance of scientific quality, while a primary goal among research partners was to ensure that the CAMN meet community needs. We believe that a CAMN developed using this methodology can provide scientifically rigorous, community-relevant air quality data to complement the regulatory networks. The provision of real-time data at community-relevant locations means that individuals can use CAMN data to change behaviors to reduce PM exposures, while the ability to identify temporal and spatial pollution patterns increases the utility of the data for public health planning and policymaking at community and regional levels. As the next generation of small, low-cost air sensors offers new opportunities for establishing CAMNs, it is important to continue developing and utilizing siting approaches with respect to the ability to promote data quality and relevance for communities and researchers alike. It's our hope to promote interest for legislation that requires state and local regulatory agencies, to partner with organizations like CHEC to install community air monitoring systems in priority or environmental justice communities.

Section 4. – Environmental Results—Outcomes, Outputs and Performance Measures

The proposed project aligns with the EPA Draft FY 2022-2026 EPA Strategic Plan – October 1, 2021 Goal 4: Ensure Clean and Healthy Air for All Communities Protect human health and the environment from the harmful effects of air pollution. Objective 4.1: Improve Air Quality and Reduce Localized Pollution and Health Impacts Reduce air pollution on local, regional, and national scales to achieve healthy air quality for people and the environment.

The proposed project will work with EPA focus on advancing environmental justice by engaging residents in identified communities on key activities including technical assistance, regulation development, and financial assistance.

The proposed project will work with EPA to promote early integration of environmental justice considerations in the regulatory process. CHEC will undertake air monitoring and other assessment approaches to address these long-neglected air quality and public health problems.

A. Expected Project Outputs and Outcomes-

The expected outputs of the project include establishing a Steering Committee comprised of residents, experts, researchers and government agencies as decision-making body. Establish a CAMN that would provide residents with accurate, real-time data on air quality in their communities that could also be used in scientific analyses to identify local trends and hotspots. The process will include deployment of 40 monitors within the CAMN over a two- year period, with significant community engagement throughout. The real-time CAMN data will be made publicly available through the Air Monitoring website. An interactive web map showing real-time data for each site, along with summary data for individual monitors, is available on the website.

B. Performance Measures and Plan-

CHEC will serve as the community-based organization to lead and provide oversight and coordination responsibilities of the overall project that include grant management; personnel; financial and program management.

- Overseeing subrecipients, and/or contractors and vendors;
- Tracking and reporting project progress on expenditures and purchases; and
- Tracking, measuring, and reporting accomplishments and proposed timelines/milestones.

Consultants/Contractors will be hired to coordinate and carry out specific activities of the plan to effectively implement project.

C. Timeline and Milestones-

Project Timeline (2 years in total, 1 year of air sampling)

Activity	Oct - Dec 2022	Jan. – Mar. 2023	Apr. – Jun 2023	Jul – Sep 2023	Oct.- Dec 2023	Jan. – Mar. 2024	Apr. – Jun 2024	Jul – Sep 2024
Hire Support Staff, Consultants	x							
Equip. purchase Training, testing	x	x	x	x	x			
Preparation for sites and field monitoring		x	x					
Monitoring intensives			x	x	x	x	x	
Data Analysis and assessment					x	x	x	x
Preliminary assess. reports						x	x	
Final Reports								x

Section 5. – Quality Assurance Statement

The Modulair PM sensors produced by Quant-AQ have been designed to make the most accurate measurements possible using low-cost sensor technology. PM measurements and corrections have been documented in the research literature and described in detail (Hagan and Kroll, 2020). For low-cost electrochemical sensors designed to measure gas-phase species, best practices for calibration of those sensors are described in (Hagan et al. 2018) and (Cross et al. 2017). We will rely on the calibration and Quality Assurance/Quality Control QA/QC of these sensors as delivered from the manufacture as a first level of QA/QC. Comparisons across monitors, and with regulatory measurements will also be performed periodically. Our partner, Peter DeCarlo PhD, associate

professor and the research group at John Hopkins University will serve in advisory capacity on the project to ensure that the results of the work performed will satisfy the stated performance and/or acceptance criteria.

Section 6 – Programmatic Capability and Past Performance

A. Past Performance

Community Housing & Empowerment Connections Inc. (CHEC) has no past performance to list under federal and/or non-federally funded assistance agreements.

B. Reporting Requirements

As previously stated, Community Housing & Empowerment Connections Inc. (CHEC) has no past performance or history of meeting the reporting requirements under federal cooperative agreements.

C. Staff Expertise

Community Housing and Empowerment Connections Inc. (CHEC) is a community-based non-profit organization established in 2001 by a community resident turned environmental justice advocate. CHEC specializes in community organizing, advocacy, education and outreach. We are the constituency that we serve. We have a trained staff of volunteers who have years of experience working in low-income communities of color to address social and environmental justice issues in their neighborhood. CHEC, Inc. will provide oversight and coordination for this project. CHEC co-authored the *EJ for Delaware Report (2017)*; along with the Union of Concerned Scientists; led the development of several community coalitions that include: the Wilmington Prevention Coalition, the New Castle Prevention Coalition, Delaware Concerned Residents for EJ and the Delaware Environmental Justice Community Partnerships. CHEC is currently the lead agency for the Community Air Monitoring Network for EJ communities in New Castle County, Delaware.

Octavia Dryden, is founder and executive director of Community Housing & Empowerment Connections Inc. (CHEC, Inc.), the lead agency of this project. She has more than thirty years of experience leading community projects in the targeted communities. She served as Co-Principal Investigator with Delaware State University on a ACCEL -CTR sponsored Retreat on Toxic Pollution and Health Impacts. She was Community PI for a pilot Community Air Monitoring Network, in collaboration with Christiana Care Health Services.

Community Coordinators will be hired under contract to support project team and coordinate activities of the project to include: trainings, meetings, site, host and maintain monitors in selected communities.

Peter DeCarlo PhD, associate professor at John Hopkins University will serve as a consultant to assist and advise the project team on the Quality Assurance Plan to collect and analyze data. He will also assist with evaluation of project performance and report on activities of project.

In addition to our main partner, the Community Steering Committee include: residents, neighborhood business and organizations, Christiana Care Health Services, Division of Public Health, the State NAACP-Health Committee, Delaware Concerned Residents for Environmental Justice, Southern Delaware Alliance 4 Racial Justice, Minority Workforce Development Coalition and Clean Air Council. Our allies include: state agencies, New Castle County, DE Natural Resources for Environmental Control, ACCEL-CTR Delaware, Building Equity & Alignment, Dream Corp/Green for All, National Black Environmental Justice Network and many others. (SEE Optional Other Attachments: Bio sketch/Resumes and Letters of Support)

Section 7. – Budget Detail

Line Items & Itemized Costs	EPA Funding
Personnel	
Project Manager \$50/hr. x 30 hrs./wk. x 104 wks.	\$156,000
TOTAL PERSONNEL	\$156,000
Fringe Benefits	
17% x Total Personnel	26,520
TOTAL FRINGE BENEFITS	26,520
Travel	
Mileage for PM: 50 miles/wk. @ .50/mi. x104 wks.	\$2,600
TOTAL TRAVEL	\$2,600
Supplies	
Outreach Material and Supplies	\$3,000
2 Laptop Computer @ \$800/unit	\$1,600
TOTAL SUPPLIES	\$4,600
Equipment	
20 PM Monitors @ \$3000/unit	\$60,000
TOTAL EQUIPMENT	\$60,000
Contractual	
Program Support Staff@ \$40/hr. x 10 hrs./wk. x 104 wks.	\$41,600
Quality Assurance Consultant @ \$24,000	\$24,000
Equip. Services Contract	\$10,000
TOTAL CONTRACTUAL	\$75,600
Other Costs	
	\$0
TOTAL OTHER	\$0
Indirect Costs	
10% de minimis rate	\$32,532
TOTAL INDIRECT	\$32,532
TOTAL FUNDING	\$357,852
TOTAL PROJECT COST	\$357,852



Environmental Justice for Delaware

*Mitigating Toxic Pollution in New Castle
County Communities*

Caution

Hazardous chemicals may be
present in this area. Failure to
use caution may cause serious
injury or illness!

Contact operator for hazard in-
formation & safety instructions.

Toxic Chemical Risks and Environmental Justice

Though there has been a significant improvement in our overall national environmental quality over the past several decades, many communities across the United States have not reaped the benefits. An extensive and expanding body of scientific evidence finds that people of color and those living in poverty are located more often in communities—termed environmental justice communities or overburdened communities—that are exposed to disproportionately higher levels of environmental pollution than Whites or people not living in poverty (Collins, Munoz, and JaJa 2016; Cushing et al. 2015; Bullard, Johnson, and Torres 2011; Mohai, Pellow, and Roberts 2009; Ash et al. 2009; Downey and Hawkins 2008; Hynes and Lopez 2007; Mohai and Saha 2006; Ringquist 2005; Bullard 2000). The Environmental Protection Agency (EPA) defines environmental justice as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies” (EPA n.d.a). People in these communities are exposed on a daily basis to high pollution levels from industrial sources, such as those releasing toxic pollution into air and water or disposing pollution onto the land; pollution from high volumes of cars, trucks, and rail freight; and other pollution sources including toxic waste sites.¹

People in these communities are exposed on a daily basis to high pollution levels from industrial sources.

CHRONIC EXPOSURE AND RISK OF DISASTROUS CHEMICAL RELEASES

The high pollution levels that these populations face results in cumulative health impacts that are amplified by other negative socioeconomic and health factors, such as the lack of access to health care, healthy foods, and public transportation; poor housing conditions and infrastructures; and stress from poverty, unemployment, and crime, among other factors (Prochaska et al. 2014; O'Neill et al. 2003). These cumulative stressors underscore the need to address environmental justice for these communities, especially since the compounding factors can make it more challenging to identify adverse health effects from environmental pollution and thus discourage much-needed research on these effects.

In addition to being subject to health risks posed by exposure to toxic pollution day in and day out, people in these environmental justice communities often live near hazardous chemical



At home, work, school, pray, and play, the health of community members is put at risk by chemicals and pollution released by industrial facilities.

Courtesy: Goldman/UCS

facilities vulnerable to unplanned chemical releases. Compared with national averages, a significantly greater percentage of Blacks (African Americans), Latinos (Hispanics), and people living in poverty live near industrial facilities that store, process, or transport large quantities of toxic chemicals that present a risk of chronic exposure to toxic air pollutants and major chemical disasters (CEG 2016; EJHA 2014). Conversely, larger, more chemical-intensive facilities tend to be located in counties with larger Black populations and in counties with high levels of income inequality, and facilities in counties with larger Black populations are at greater risk of chemical accidents and spills (Elliott et al. 2004).

Releases of toxic chemicals from industrial sources into surrounding communities are frequent events. The EPA estimates that approximately 150 catastrophic incidents occur each year in industrial facilities regulated under its Risk Management Program (RMP). These facilities are the nation's most high-risk industrial facilities that produce, use, or store significant quantities of toxic, explosive, and flammable chemicals. Among other requirements, these facilities must prepare plans for responding to a worst-case incident such as a major fire or explosion in which toxic chemical pollution is released in to the surrounding community (EPA 2017a). The EPA notes that these incidents “pose a risk to neighboring communities and workers because they result in fatalities, injuries, significant property damage, evacuations, sheltering in place, or environmental damage” (EPA 2017b). Less severe incidents happen regularly—425 chemical incidents occurred in the little more than two years between an explosion in April 2013 at a West Texas fertilizer facility that killed 15 people and August 2015 (CPCD 2015), and many others likely went unreported. Less severe, “near miss” incidents are often precursors to more catastrophic events (EPA 2017c), and frequent facility malfunctions that result in the release of high levels of toxic chemicals may themselves directly impact the health of people living in nearby communities (EIP 2004). Communities closest to these hazardous facilities also have the least amount of time to escape these dangers (USCSB 2016).

PROTECTING RESIDENTS' HEALTH

Responses such as cleaner industrial production and other means of reducing environmental and health risks are politically challenging to implement, whether voluntarily or through regulation/enforcement and policy change. Alternatively, residents could relocate in the face of these risks. However, given the multiple societal constraints faced by low-income people, especially those who are people of color, relocation from the immediate vicinity of these hazardous industrial sources is often not a realistic option without substantial

financial and political assistance. Historical failure to achieve substantial improvements in their situation is due to a host of interrelated factors including poverty, institutionalized racism and discrimination, lack of political power, poor health, hopelessness, fear, and skepticism regarding the potential for change. To effectively address the needs of these communities requires a deeper understanding of, and respect for, the issues facing them—not only regarding the intersection of race, gender, culture, poverty, and disproportionate impacts of pollution, but including a broader look at the societal systems that allowed these situations to develop.

Relocation from the immediate vicinity of these hazardous industrial sources is often not a realistic option without substantial financial and political assistance.

The purpose of this collaborative study between the Union of Concerned Scientists; the Environmental Justice Health Alliance for Chemical Policy Reform; Delaware Concerned Residents for Environmental Justice; Community Housing and Empowerment Connections Inc.; and Coming Clean, Inc. is to provide technical information to several northern New Castle County communities about potential cumulative health risks from residents' proximity to polluting industrial facilities, contaminated sites, and exposure to toxic air pollution. The aim of the study is to assist their advocacy efforts to address the connection between their environmental pollution exposures and public health. Our findings and recommended solutions to these environmental justice issues will also inform policymakers about the scope of disproportionate environmental health risks in these communities and describe a path forward to address them.

The impetus for this study was the many questions and stories of people in Delaware, with families, friends, and communities suffering and dying from brain cancer and other cancers. Many of these communities and families are also grappling with, and have histories of health challenges that are linked to or worsened by, exposure to pollution such as strokes, heart diseases, severe dementia and Alzheimer's disease, sudden infant death syndrome, and chronic childhood illnesses such as asthma, learning disabilities, and neurological diseases.

This report examines the health and safety risks for seven communities with a percentage of people of color and/or poverty levels greater than the Delaware average, located along an industrial corridor in the northern portion of Delaware's New Castle County—an area that is home to major polluting industrial sources as well as facilities that use large quantities of toxic, flammable, or explosive chemicals. It compares these communities to a predominantly White and affluent community located outside the industrial corridor and to Delaware residents overall.

Our analysis looked at potential cumulative impacts from the following health and safety issues for these communities:

- risk of cancer and potential for respiratory illnesses affecting residents in the seven communities that stem from toxic outdoor air pollution;
- proximity to facilities in EPA's Risk Management Program (RMP) that use large quantities of toxic, flammable, or explosive chemicals and pose a high risk of a major chemical release or catastrophic incident;
- proximity to major polluting industrial sources that report their pollution emissions to the EPA Toxics Release Inventory (TRI); and
- proximity to contaminated hazardous waste sites listed in EPA's Brownfield and Superfund Programs.

While we focused specifically on seven environmental justice communities—Belvedere, Cedar Heights, Dunleith, Marshallton, Newport, Oakmont, and Southbridge—other nearby environmentally-impacted communities such as Rosegate, Rose Hill, and Hamilton Park likely face similar risks.

Many homes were built with cheap and substandard building materials, and—with stressors from pollution—declined drastically over time.

Seven Environmental Justice Communities in Delaware: Past and Present

Numerous communities in Delaware, unseen by many, suffer economic and environmental disparities and lack political representation. In these environmental justice communities—or legacy communities—long-standing social and environmental

injustices persist, and old injustices have given way to new ones. Historical injustices inform how residents of these communities understand present-day environmental injustices. The histories of Delaware's legacy/environmental justice communities encompass pre-Civil War struggles of resistance, participation in the historic 1954 Supreme Court case *Brown v. Board of Education*, segregated housing patterns, and months of federal occupation in Black communities after Dr. Martin Luther King Jr.'s assassination. These events and experiences undergird the communities' resilience and profoundly inform their approaches to such entrenched problems.

A HISTORY OF SUBSTANDARD HOUSING

Present-day concerns about legacy communities' proximity to large industrial facilities and their exposure to toxic pollution released on a daily basis or potentially released in acute, unplanned incidents cannot be separated from the communities' history of discrimination and substandard housing.

During the 1940s and early 1950s, Blacks in Wilmington began to be steered toward newly created housing, including the public housing community of Southbridge built just outside the South Wilmington city limits. These buildings, like others in the state, were built on top of a filled marsh in an area where flooding was a perennial issue, now made worse as the sea level rises due to climate change.

Other types of housing created along the Route 9 industrial corridor also targeted Blacks. These homes were also built on top of filled marshes, and none of these homes were built with basements to minimize flooding risks. Moreover, many of the homes were built with cheap and substandard building materials, and—with stressors from pollution—the condition of the homes declined drastically over time. These homes were in communities such as Hamilton Park, Dunleith, Oakmont, Rose Hill, and Rosegate. A thriving Black middle class once lived where the Chemours (formerly DuPont) headquarters is now located, with many of them relocating to the newly created communities of Belvedere and Cedar Heights located near the Town of Newport. The communities along the Route 9 corridor are all within one mile of the Delaware Memorial Bridge, which handles a large volume of truck and car traffic and extends over a DuPont chemical plant, and all are near the now closed nearby Cherry Lane landfill.

COMMUNITIES' EFFORTS TO PROTECT THE ENVIRONMENT AND HUMAN HEALTH

Communities are already taking action to protect the environment from industrial pollution and to address some of their own health problems arising from environmental contamination. A recent challenge prompting community action was an

effort by the newly elected Democratic governor and state legislators to amend the Coastal Zone Act to spur new economic development for Delaware. Delaware's Coastal Zone Act was signed in 1971 by Governor Russell Peterson, a former DuPont research scientist, responding to constituents' calls to block an international oil and gas refinery from locating on Delaware's coast. The governor felt he was protecting wildlife species, and the state regulatory agency considered that the bill protected communities from coastal storms. However, the law grandfathered in 14 existing industries and offered no protection for the health and well-being of those who lived, worked, and recreated along the coast.

Today, the state legislature is threatening to amend the law to allow for heavy industrial operations on the coast in an attempt to re-invigorate Delaware's manufacturing and energy economy. Concerned residents are calling for a facilitated, scientific, fact-based process that includes impacted workers' and community voices, input that is particularly crucial today in light of its absence in 1971.

Communities have also taken steps to counter the recurring argument that their *lifestyles*, rather than broader environmental factors, are responsible for their health problems. Some communities have organized and conducted their own health studies. The outcomes of these studies have resulted in the organization of community-directed cancer clinics, housing relocation, and community organizing to make better connections between (1) exposure to toxic chemicals and pollution, (2) threats of sea level rise and the impacts on flooding in coastal communities, and (3) heavy metals and diesel contamination related to trucks and ships. The Route 9 Industrial Task Force has served as a force along the Route 9 industrial corridor to hold industries and regulatory agencies accountable, especially in those gray areas where jurisdictional lines allow gaps in protection.

CALLING FOR EDUCATION, INFORMATION, AND EMPOWERMENT

Communities are pressing for more resources with which to take necessary, effective action. Residents want evacuation plans that they can practice. They want urban planners and housing developers to understand the importance of incorporating safe and healthy building materials. They want safe, healthy, and affordable communities and housing structures irrespective of race and income.

Organizations such as the Delaware Concerned Residents for Environmental Justice, Neighbors Rebuilding Our Neighborhoods, Community Housing and Empowerment Connection Inc., Minority Workforce Development Coalition, Delaware Sierra Club, Route 9 Industrial Taskforce, and the Delaware Department of Natural Resources and Environmental Control are providing tools and support to residents,

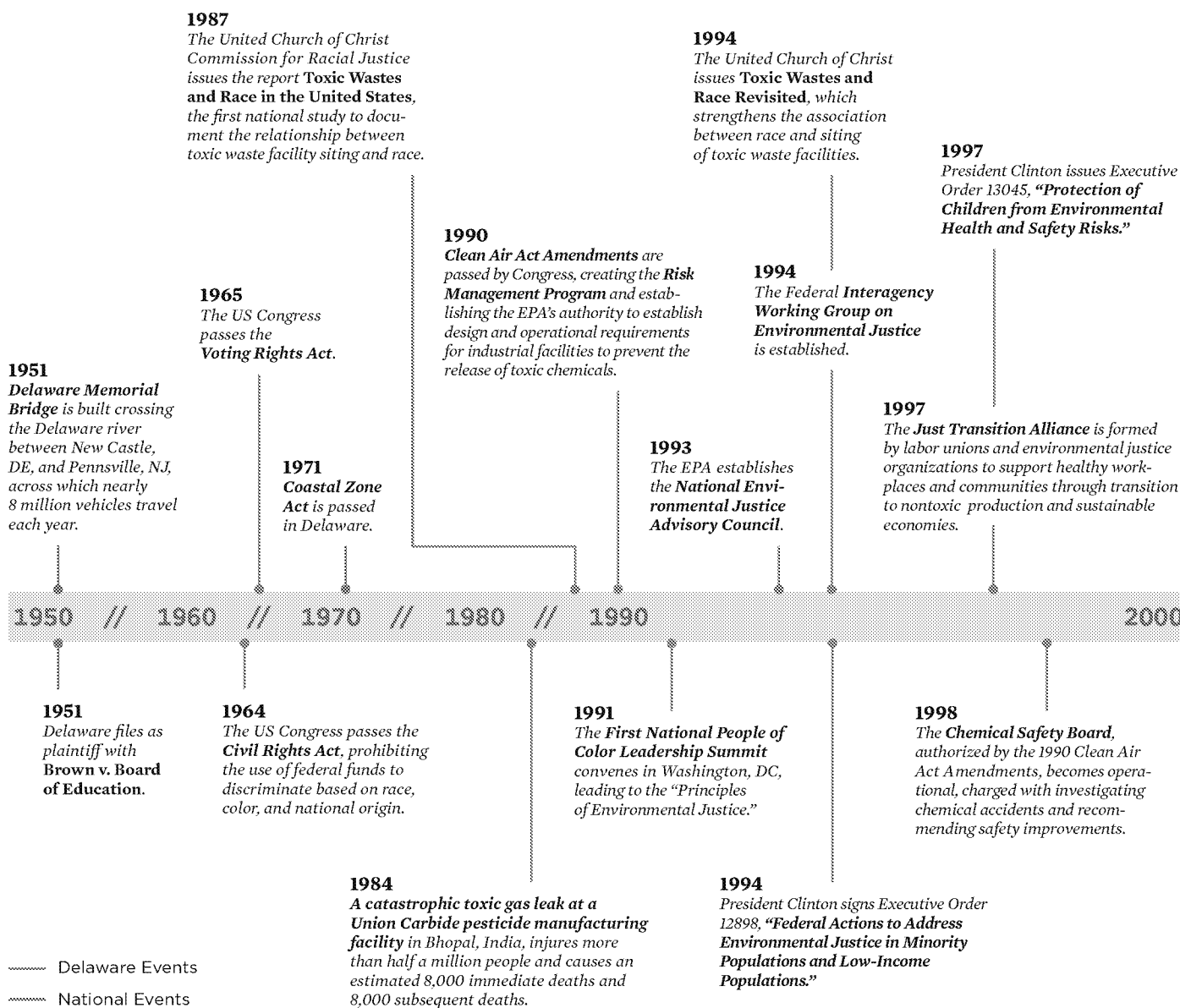


Kenneth Dryden of the Delaware Concerned Residents for Environmental Justice and a former Southbridge resident leads a tour of toxic facilities to teach scientists and community members about the dangers of local air pollution.

advocates, and elected officials to provide communities the tools needed to help them navigate what environmental justice communities call the journey of "speaking for themselves" and taking their own destinies into their hands. For example, during the 1990s the Delaware Department of Natural Resources and Environmental Control facilitated a statewide community engagement process with community leaders that produced more than 30 recommendations to the state regulatory process for better engaging environmental justice communities throughout the state and better addressing their concerns, including cumulative impacts of health and safety risks.

Today, environmental justice communities in northern New Castle County are calling for a policy approach that addresses exposure to both indoor and outdoor air toxics. They support changes in development and land use policies, including permits and practices that address cumulative environmental and health impacts and the siting of healthcare facilities and schools. Overall, they are calling for proactive plans that will protect them from chronic exposure to toxic air pollution and disastrous chemical releases. In all of these efforts, communities want to be part of the process because they are closest to the problems and potential solutions and are committed to healthy lives along a healthy coast.

Selected Events in the History of Environmental Justice, 1951–2017



Note: This timeline includes selected environmental justice events that are most relevant to the information contained in this report. For a more complete history and timeline of the environmental justice movement, see Bullard et al. 2014 and EJHA 2014.

SOURCES: ADAPTED FROM BULLARD ET AL. 2014 AND EJHA 2014.

Dozens of public health, labor, and environmental groups publicly endorse the **Louisville Charter** as a roadmap for policies to protect all communities based on principles of health and justice.

*The Indigenous Environmental Network Meeting in Bemidji, MN, adopts the **Bemidji Statement on Seventh Generation Stewardship.***

2001
Coming Clean
Collaborative in
New Orleans, LA.

2002
*The Second National
People of Color
Environmental
Leadership Summit*
convenes in
Washington, DC,
attracting more
than 1,400 attendees.

2006
Coming Clean's **Fenceline Action Workgroup** sponsors the national 40-stop Environmental Justice for All Tour, culminating in actions in Washington, DC, and Los Angeles.

2007
*The United Church of Christ releases the report **Toxic Wastes and Race at Twenty**, confirming and updating the findings of the original report.*

The National Environmental Justice Advisory Council supports grassroots and labor groups in asking EPA Administrator Lisa Jackson to use the agency's authority under the Clean Air Act to require chemical companies to adopt safer technologies at their facilities to prevent chemical disasters.

Grassroots groups, advocacy organizations, and government agencies celebrate the 20th anniversary of President Clinton's executive order on environmental justice.

Delaware's Coastal Zone Act is amended allowing heavy industrial use and redevelopment on the coast, including 14 former and current sites, 13 of which are in New Castle County.

The Fenceline Action Workgroup of Coming Clean is formed to provide direct support to community environmental justice groups.

Coming Clean ratifies the Louisville Charter for Safer Chemicals: A Platform for Creating a Safe and Healthy Environment through Innovation.

Coming Clean's **Chemical Industry Workgroup** develops a policy platform to maintain chemical plant security through inherent safety, by replacing hazardous chemicals with safer ones and reducing on-site storage.

*The Fenceline Action Workgroup co-hosts the **Environmental Justice Dialogue on Chemical Policy** in Atlanta, GA.*

*Delaware Concerned
Residents for
Environmental Justice
established.*

The Coalition to Prevent Chemical Disasters is formed by 100 diverse organizations, committed to preventing chemical facility disasters and demanding immediate federal action to protect workers and fenceline communities.

*President Obama
announces Executive
Order 13650, "Improving
Chemical Facility
Safety and Security."*

Hundreds of community members turn out for federal listening sessions on Executive Order 13650 in Texas, California, New Jersey, and elsewhere to call for decisive action.

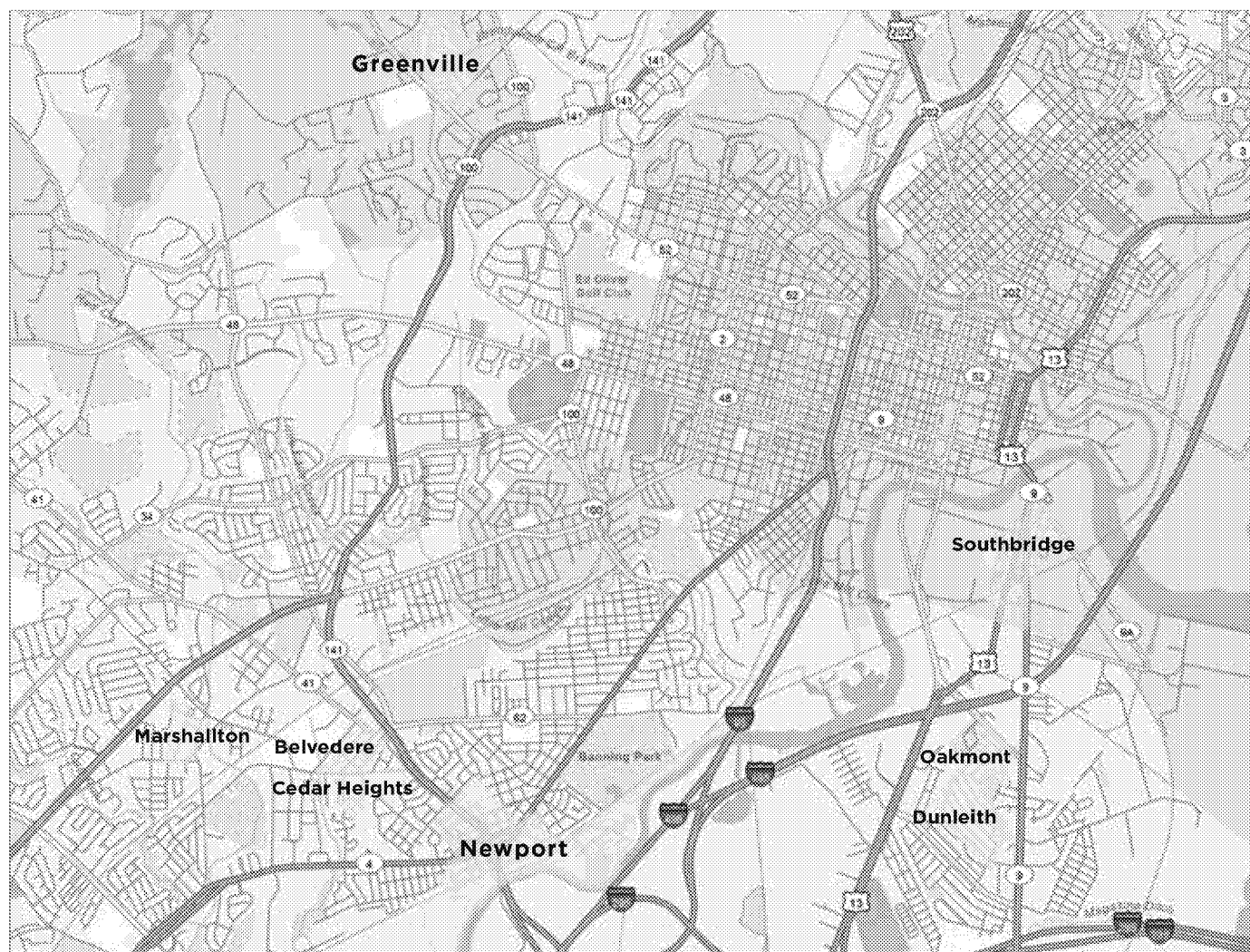
As a result of Executive Order 13650, the EPA adopts revisions to its **Risk Management Program.**

The EPA publishes final rule delaying the effective date of the revised **Risk Management Program** until February 19, 2019.

The Stockholm Convention on Persistent Organic Pollutants names an initial set of toxic chemicals to be banned worldwide. Native American and Native Alaskan organizations successfully advocate for inclusion of language on the disproportionate impacts on indigenous peoples.

*The Fenceline Action Workgroup co-hosts a policy dialogue in Washington, DC, at which 27 environmental justice groups form the **Environmental Justice and Health Alliance for Chemical Policy Reform.***

FIGURE 1. Seven Delaware Communities Were Analyzed for Their Proximity to Sources of Toxic Chemical Pollution and Health Risks and Compared with the Wealthier and Predominantly White Community of Greenville and Delaware Overall



DEMOGRAPHICS

Table 1 summarizes demographics for the eight Wilmington-area communities examined. Dunleith and Oakmont are almost entirely populated by people of color (96 percent), and the majority of people in Southbridge and Belvedere are people of color (67 percent and 55 percent, respectively). Whites represent a majority in Marshallton, Cedar Heights, and Newport. Greenville, the community selected for comparison, is almost entirely White (87 percent). Poverty rates in Oakmont, Dunleith, and Southbridge, which were the highest of the seven Wilmington-area communities, are about six times higher than in the predominantly White and wealthier Greenville

community, and these three communities had approximately twice the poverty rate of the state of Delaware overall.

Methodology

DEMOGRAPHIC DATA AND LOCATION OF FACILITIES

The boundaries of the communities of Belvedere, Cedar Heights, Dunleith, Greenville, Marshallton, Newport, Oakmont, and Southbridge were determined using the Census Bureau's map layers (Census Bureau 2016) as were the boundaries for the census tracts and block groups. Block group data

were obtained from the US Census Bureau’s American Community Survey 2009–2015 demographic data (Census Bureau n.d.a.). The block group that contained the largest portion of the community was used to represent the demographic data for the entire community.

The demographic data were obtained from the US Census Bureau’s American Community Survey. The Census Bureau’s advanced American FactFinder interface was used to create tables of these data at the level of census tract and block group (Census Bureau n.d.a). The American Community Survey database is updated annually and summarized into one-, three-, and five-year spans. Per the Census Bureau’s recommendation regarding data selection, we selected the most recent five-year span, 2011–2015 (Census Bureau n.d.b).

Publicly available data from the EPA’s Risk Management Program, as provided by the Right-to-Know Network, were used to determine which RMP facilities were located in Delaware.² Facilities were located based on their self-reported latitude and longitude. All other information about the facilities (e.g., number of accidents, number of injuries) was also obtained from the Right-to-Know Network’s database and is reported by the facilities.

Toxic Release Inventory facilities, Superfund sites, and Brownfields locations were obtained from the EPA’s Federal

Three of the environmental justice communities had approximately twice the poverty rate of the state of Delaware overall.

Reporting System geospatial database (EPA n.d.c). The Delaware facilities were extracted from the database based on the “state” field; the locations as provided by the EPA were used with no modifications.

Public and private school data were downloaded from the National Center for Education Statistics, and the most recent dataset was used for each (2014–2015 school year for the public school data (NCES n.d.a) and 2011–2012 school year for the private school data (NCES n.d.b). All schools in the dataset were mapped using their self-reported addresses. Since schools within one mile of the communities in the study are likely to have children from those communities in attendance, we drew a one-mile buffer around the communities and identified all schools within the boundaries of those buffers.

TABLE 1. Demographic Differences Among Environmental Justice Communities Compared with Greenville and Delaware Overall

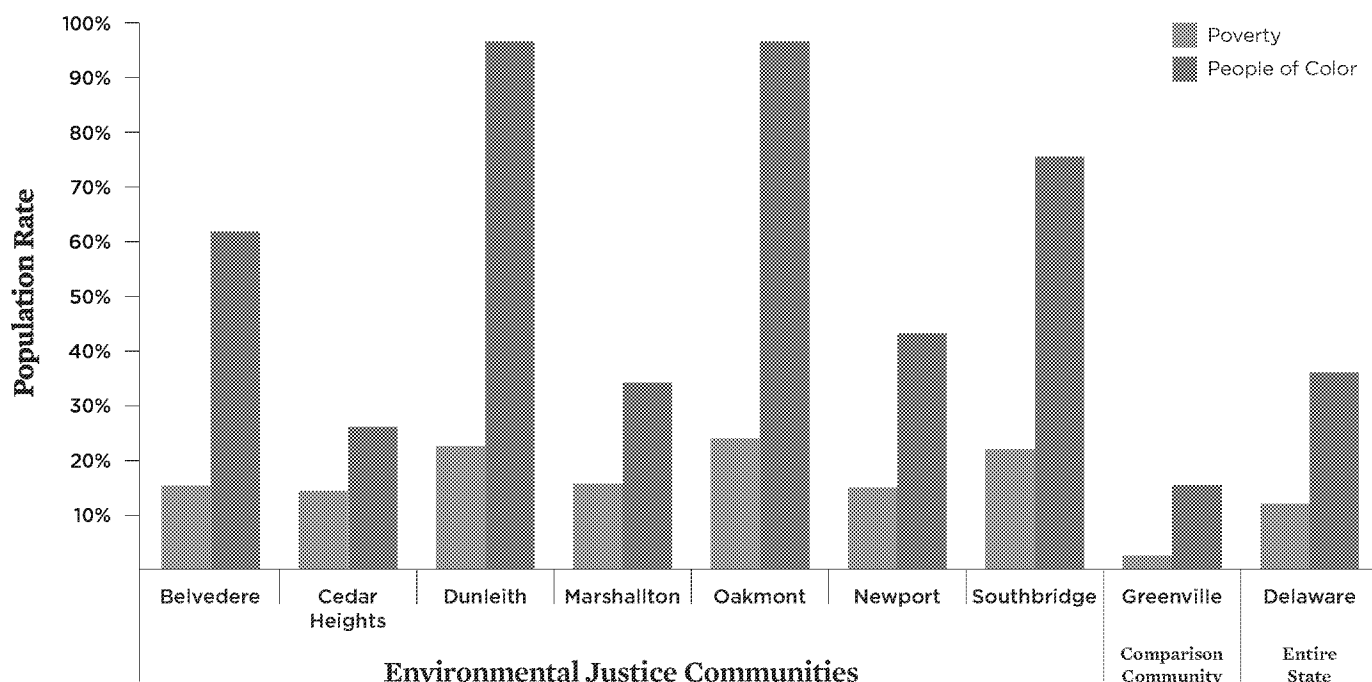
		Total Population*	Black	Hispanic	White	Other	Poverty
Environmental Justice Communities	Belvedere	2,074	22%	33%	38%	7%	15%
	Cedar Heights	1,508	23%	3%	74%	0%	14%
	Dunleith	1,717	81%	15%	3%	<1%	23%
	Marshallton	746	6%	24%	66%	4%	16%
	Newport	1,299	18%	23%	57%	2%	15%
	Oakmont	1,717	81%	15%	3%	<1%	24%
	Southbridge	1,270	65%	2%	21%	12%	22%
Comparison Community	Greenville	1,411	1%	1%	87%	11%	4%
Entire State	Delaware	926,454	21%	9%	64%	6%	12%

Using geographic boundaries and racial and poverty statistics from the Census Bureau, the demographics of the population in each of the eight communities and the state of Delaware were compared with each other.

*Community populations are based on census block group within geographic boundaries.

SOURCE: CENSUS BUREAU N.D.A.

FIGURE 2 Poverty and People of Color in Environmental Justice Communities Compared with Greenville and Delaware Overall



Residents of Dunleith, Oakmont, and Southbridge are predominantly people of color and experience poverty rates substantially higher than Delaware overall. People of color are in the majority in Belvedere, while poverty rates in Cedar Heights, Marshallton, Newport as well as Belvedere are above the overall Delaware rate.

SOURCE: CENSUS BUREAU N.D.A.

DATA ON HEALTH RISKS AND HAZARDS

We obtained cancer risk and respiratory hazard index data as well as data on specific pollutants from the 2015 National Air Toxics Assessment (NATA) using the census tract identification (EPA 2015). The 2015 NATA data are the most recent available. The census tract that contains the largest portion of a given community was used with no further calculations.

The NATA was developed primarily as a tool to inform both national and more localized efforts to collect air toxics information and characterize emissions (e.g., to prioritize pollutants or geographical areas of interest for more-refined data collection such as monitoring). The 2015 NATA dataset is based on 2011 data for 140 toxic air pollutants from a broad spectrum of sources including large industrial facilities such as refineries and power plants, and smaller sources, such as gas stations, oil and gas wells, and chrome-plating operations. Other pollution sources include cars, trucks, and off-road sources such as construction equipment and trains, as well as pollution formed by chemical reactions of these emissions

Other pollution sources include cars, trucks, and off-road sources such as construction equipment and trains.

in the atmosphere. The numbers calculated by the EPA are intended to reflect toxic air pollution-related health hazards that are, in principle, controllable through better management practices by emitters.

WHAT THE NUMBERS MEAN: HOW CANCER RISK AND RESPIRATORY HEALTH HAZARDS WERE CALCULATED

The EPA calculates the amount of toxic air pollution faced by people at the census-tract level and uses health benchmarks to estimate cancer risks and the potential for respiratory



Deborah Coleman/TCS

Refineries, such as the Delaware City Refinery shown here, can emit toxic chemicals that can increase risks for cancer and respiratory disease.

health hazards from the combined effect of those exposures. Health risks and health hazards are distinct measures (see below), but both reflect the negative impacts on communities of exposure to toxic industrial facilities located near schools and homes.

The EPA generates data on the health risks from toxic air pollution using emission reports from industry and pollution dispersion models combined with data from a limited number of pollution-monitoring stations. **Cancer risks** are expressed as the projected number of air pollution–related cancers per million people based on a 70-year lifetime of exposure. The EPA estimates that the national average risk of cancer from a lifetime of exposure to toxic air pollution at 2011 levels is 40 cancers per million people (EPA n.d.d). For comparison, when the EPA sets national toxic air pollution standards for industrial sources, its cancer risk target for the general population is one in one million (EPA 1999).

A **respiratory hazard index**, in contrast, does not speak to a direct effect on human health but rather is a measure of

the amount of the hazardous substance in the environment (which, of course, has important effects human health) compared with a health metric. A respiratory hazard index is the ratio of existing pollutant levels to levels established by the EPA as not likely to cause non-cancer respiratory illnesses based on a lifetime of exposure. If an existing pollutant level is the same as the non-concerning benchmark, the ratio is 1. An index value greater than 1 indicates the potential for adverse respiratory health impacts, with increasing concern as the value increases above 1.

Both health measures are based on a combination of monitored and modeled data and thus are estimates of average risks and hazards affecting a community rather than exact risks or hazards for a particular person. The lower the cancer risk and respiratory hazard index values, the lower the overall cancer risk and potential for respiratory illness. However, many other factors determine any given person's health; therefore, even relatively low values must be considered with caution.

ADDITIONAL RISKS NOT CAPTURED IN THIS ANALYSIS

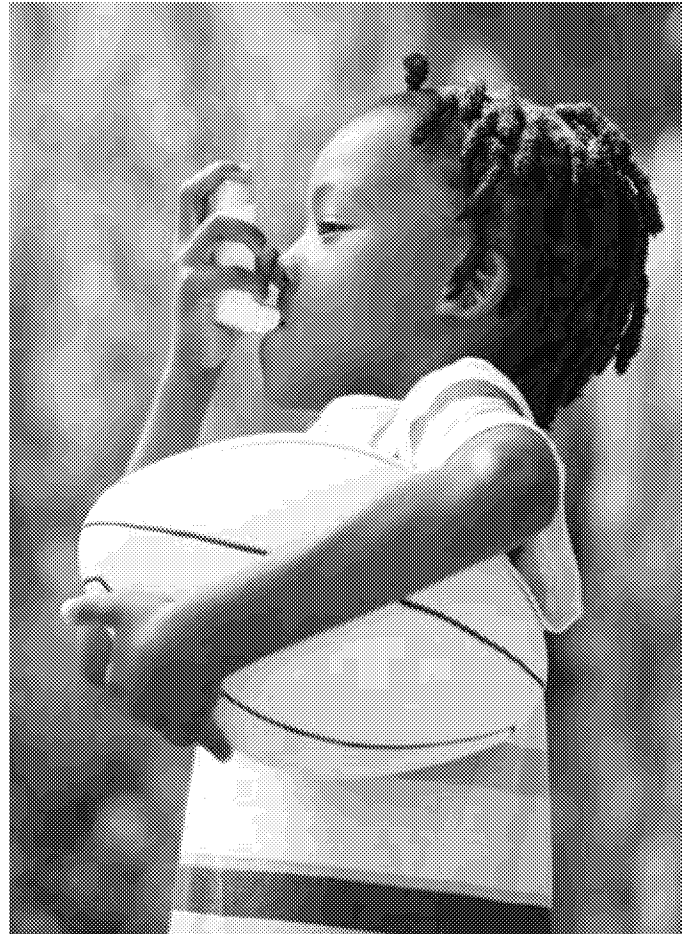
NATA's estimates include only the chronic cancer risks for those air toxics that the EPA is currently able to identify and quantify. Therefore, these risk estimates represent only a subset of the total potential cancer risk associated with air toxics exposures. Importantly, these risk estimates do not consider additional exposure pathways such as ingestion of toxic chemicals from foods or water or the breathing toxic air pollution from indoor sources, nor do they take into account the potential for combined impacts from exposure to multiple chemicals. In addition, while the NATA health risk data are based on exposure to outdoor air pollution, urban outdoor air pollution can be an important contributor to indoor air quality, especially in highly ventilated homes or in homes near pollution sources (WHO n.d.).

Results: Health Risks of Exposure to Toxic Air Pollution

CANCER AND RESPIRATORY HEALTH RISKS

Residents of the seven northern New Castle County environmental justice communities face substantially higher cancer risks and respiratory hazard indices from toxic air pollution than people in the comparison community of Greenville or the overall Delaware population (Table 2). People in Marshallton, which has a substantial proportion of people of color and poverty rates above the Delaware average, face the highest cancer risk and respiratory health hazard of all the communities studied, with cancer risks and respiratory health hazards that are 33 and 71 percent higher, respectively, than Greenville and 28 and 55 percent higher than for Delaware overall. The communities of Dunleith, Oakmont, and Southbridge, whose residents are predominantly low-income people of color, have cancer risks that are 19 to 23 percent higher than for Greenville and 14 to 18 percent higher than for Delaware overall. Respiratory health hazards in these three communities are 32 to

Residents of the seven New Castle County communities face substantially higher cancer risks than people in the comparison community.



Air pollution exposure can lead to respiratory disease and cancer. Children are particularly vulnerable.

43 percent higher than for Greenville and 20 to 30 percent higher than for Delaware overall.

Cancer risks in Newport, Belvedere, and Cedar Heights, which have a substantial proportion of people of color and poverty rates above the Delaware average, are 21, 15, and 12 percent higher than for Greenville, respectively, and are 16, 10, and 7 percent higher than for Delaware overall. Respiratory health hazards in Newport, Belvedere and Cedar Heights are 44, 30, and 24 percent higher than for Greenville, respectively, and 31, 18, and 13 percent higher than for Delaware overall.

TOXIC AIR POLLUTANTS WITH THE GREATEST POTENTIAL HEALTH IMPACTS

Using NATA data, we selected air pollutants with the largest contribution to health risks in the study communities (Table 3, p. 14). The five chemicals that contributed the most to cancer and respiratory hazard risks were generally consistent across all communities. Formaldehyde was by far the most significant chemical contributing to the cancer risk, accounting for

TABLE 2. Cancer Risks for Environmental Justice Communities Compared with Greenville and Delaware Overall

		Cancer Risk	Comparison to Greenville	Respiratory Hazard Index	Comparison to Greenville
Environmental Justice Communities	Marshallton	46.51	33%	2.39	71%
	Southbridge	42.95	23%	2.00	43%
	Newport	42.19	21%	2.02	44%
	Dunleith	41.45	19%	1.85	32%
	Oakmont	41.45	19%	1.85	32%
	Belvedere	40.08	15%	1.82	30%
	Cedar Heights	39.03	12%	1.74	24%
Comparison Community	Greenville	34.85	—	1.40	—
Entire State	Delaware	36.40	4%	1.54	10%

Note: Cancer risk is expressed as the incidences of cancer per million people. For the respiratory hazard index, an index value of 1 or less indicates a level of studied pollutants equal to a level the EPA has determined not to be a health concern, while a value greater than 1 indicates the potential for adverse respiratory health impacts, with increasing concern as the value increases.

SOURCE: EPA 2015.

approximately one-half of the overall cancer risk in most cases. Outdoor air pollution sources of formaldehyde include gasoline-fueled cars and trucks; industries that produce fertilizer, paper, plywood, and urea-formaldehyde resins; and the breakdown of organic outdoor air pollutants (EPA n.d.e; CDC n.d.). Although formaldehyde contributed the most to cancer risk in Marshallton, the community with the highest cancer risk in this study, cancer risks from benzene, a common ingredient in gasoline and emitted by motor vehicles, by oil refineries, and from burning coal and oil (EPA n.d.f), were also high—about 40 to 70 percent higher than in the other environmental justice communities and more than twice those of Greenville, the comparison community (see Table A-1 in the online appendix).

Acrolein, which is produced from burning gas and oil in cars and trucks, in power plants, and from the breakdown of outdoor air pollutants (EPA n.d.g.), contributed the majority of potential respiratory hazard in all of the study communities and typically accounted for approximately 70 percent or more of the total respiratory hazard. As was the case with the higher cancer risk from benzene in Marshallton, acrolein-related respiratory hazard were about 25 to 50 percent higher in Marshallton than in the other environmental justice communities and about twice those of Greenville, the comparison community (see Table A-1 in the online appendix).

DISTRIBUTION OF CHEMICAL POLLUTION SOURCES

As previously noted, the EPA's Risk Management Program encompasses the nation's most high-risk industrial facilities that produce, use, or store large quantities of toxic and flammable chemicals. People living near these facilities must contend with chronic emission of toxic chemicals, as well as the possibility of acute events that pose immediate threats to their health and safety. Industrial facilities that emit significant quantities of any of the 650 toxic chemicals included in the program must report their emissions to the EPA's Toxics Release Inventory on an annual basis. These are typically larger facilities involved in manufacturing, metal mining, electricity generation, chemical manufacturing, and hazardous waste treatment.

It is important to note that while the cancer and respiratory health risks discussed above are based solely on continuous exposure to toxic air pollution, people in the study communities also live close to other potential sources of toxic pollution, such as contaminated sites included in the EPA Superfund and Brownfields Programs. They are also at risk from acute events and chemical disasters at nearby industrial facilities (Table 5, p. 16). Under the Superfund Program, the EPA is responsible for cleaning up some of the nation's most contaminated sites, while its Brownfields Program provides funds to communities, states, tribes, and others to assess, and clean up properties

TABLE 3. Top Five Cancer-Causing and Respiratory Hazard Chemicals in Environmental Justice Communities and Greenville by Contribution to Total Risk

		Top Five Chemicals Associated with Cancer Risk	Total Cancer Risk	Top Five Chemicals Associated with Respiratory Hazard	Respiratory Hazard
Environmental Justice Communities	Belvedere	Formaldehyde	49%	Acrolein	72%
		Benzene	15%	Acetaldehyde	12%
		Acetaldehyde	10%	Formaldehyde	8%
		Carbon Tetrachloride	8%	Diesel Particulate Matter	5%
		1,3-Butadiene	6%	Chlorine	1%
	Cedar Heights	Formaldehyde	50%	Acrolein	71%
		Benzene	14%	Acetaldehyde	12%
		Acetaldehyde	11%	Formaldehyde	9%
		Carbon Tetrachloride	8%	Diesel Particulate Matter	4%
		1,3-Butadiene	6%	Chlorine	1%
	Dunleith	Formaldehyde	47%	Acrolein	69%
		Benzene	13%	Acetaldehyde	11%
		Acetaldehyde	10%	Formaldehyde	8%
		Carbon Tetrachloride	8%	Diesel Particulate Matter	6%
		1,3-Butadiene	5%	Chlorine	3%
	Marshallton	Formaldehyde	43%	Acrolein	77%
		Benzene	20%	Acetaldehyde	9%
		Acetaldehyde	9%	Formaldehyde	7%
		1,3-Butadiene	7%	Diesel Particulate Matter	5%
		Carbon Tetrachloride	7%	Naphthalene	1%
	Newport	Formaldehyde	48%	Acrolein	72%
		Benzene	15%	Acetaldehyde	11%
		Acetaldehyde	10%	Formaldehyde	8%
		Carbon Tetrachloride	8%	Diesel Particulate Matter	6%
		1,3-Butadiene	6%	Chlorine	2%
	Oakmont	Formaldehyde	47%	Acrolein	69%
		Benzene	13%	Acetaldehyde	11%
		Acetaldehyde	10%	Formaldehyde	8%
		Carbon Tetrachloride	8%	Diesel Particulate Matter	6%
		1,3-Butadiene	5%	Chlorine	3%

TABLE 3. Top Five Cancer-Causing and Respiratory Hazard Chemicals in Environmental Justice Communities and Greenville by Contribution to Total Risk (CONTINUED)

		Top Five Chemicals Associated with Cancer Risk	Total Cancer Risk	Top Five Chemicals Associated with Respiratory Hazard	Respiratory Hazard
Environmental Justice Communities	Southbridge	Formaldehyde	46%	Acrolein	70%
		Benzene	15%	Acetaldehyde	11%
		Acetaldehyde	10%	Formaldehyde	8%
		Carbon Tetrachloride	8%	Diesel Particulate Matter	6%
		1,3-Butadiene	6%	Chlorine	3%
Comparison Community	Greenville	Formaldehyde	52%	Acrolein	67%
		Benzene	13%	Acetaldehyde	14%
		Acetaldehyde	11%	Formaldehyde	10%
		Carbon Tetrachloride	9%	Diesel Particulate Matter	5%
		1,3-Butadiene	4%	Chlorine	1%

SOURCE: EPA 2015.

contaminated by a hazardous substance or pollutant for redevelopment or sustainable reuse. Of the estimated more than 450,000 brownfields in the United States, states and tribes have completed more than 117,000 clean-ups and made more than one million acres available for reuse (EPA 2017d), transforming formerly polluted areas into parks, arts centers, and retail development.

When assessing the health and safety risks to communities, it is important to account for the potential cumulative environmental risks posed across the range of hazardous sources. Dunleith and Oakmont have several brownfield sites and are in close proximity to TRI facilities. The Southbridge community has 48 brownfield sites—more than half of all brownfields in Delaware—within a one mile radius. Also within one mile are two RMP facilities, 13 TRI facilities, and four Superfund sites.

CHILDREN AT RISK

Children are especially vulnerable to the effects of toxic air pollution (CalEPA 2003). In addition to being exposed—on a daily basis—to toxic air pollution, children in these communities could also be exposed to toxic chemicals released from an unplanned incident at the hazardous RMP chemical facilities in or near their communities. For example, the John G. Leach School and Harry O. Eisenberg Elementary School near

TABLE 4. Cancer and Non-Cancer Health Effects of Major Toxic Air Pollutants Impacting Environmental Justice Communities

Air Pollutant	Cancer	Non-cancer
Formaldehyde	✓	Respiratory system, eyes
1,3-Butadiene	✓	Female reproductive system
Benzene	✓	Immune system
Acetaldehyde	✓	Respiratory system, eyes
Carbon Tetrachloride	✓	Liver, kidney
Acrolein		Respiratory system, eyes
Diesel Particulate Matter*	✓	Respiratory system, heart
Chlorine		Respiratory system, eyes

*The EPA does not include cancer risks from diesel particulate matter in the NATA.
SOURCES: CARB 2016; ATSDR 2014; EPA N.D.H.

Dunleith, with a total of 661 students, are located within one mile of an RMP high-risk chemical facility.

Table 6 provides the schools and numbers of school children within one mile of the study communities as well as the cancer risks and respiratory hazards for the children at those schools. Particularly concerning is that seven schools within one mile of Southbridge, with more than 2,200 students, are in locations with substantially higher cancer risks and respiratory hazards than schools in all other communities in this study. The almost 300 elementary-school-aged students in the Kuumba Academy Charter School near Southbridge are exposed to toxic air pollution that result in cancer risks that are almost three times higher, and respiratory hazards that are more than three times higher, than schools in Greenville, the comparison community. Six other schools within one mile of the Southbridge area have toxic air pollution levels that result in cancer risks that are 55 to 74 percent higher, and potential respiratory hazards that are 81 to 125 percent higher, than schools in Greenville.

It is important to note that the cancer risks are calculated based on a lifetime of exposure to outdoor air and the children would only be subject to those conditions for the years they are attending these schools. While students spend the majority of their time in classes indoors, outdoor air is used for ventilation in schools; therefore, students may also be exposed to these pollutants while in classes, although at different (most likely lower) levels. However, these data

provide a basis for comparing the cancer risks and respiratory hazards to which these children are exposed while outdoors across the various schools.

Conclusion

People in the seven communities along the industrial corridor in the northern portion of Delaware's New Castle County face a substantial cumulative health risk from exposure to toxic air pollution and their proximity to polluting industrial facilities, hazardous chemical facilities, and contaminated waste sites. These health risks are substantially greater than those experienced by residents of a nearby wealthier and predominantly White community in Delaware and for Delaware as a whole.

Recommendations and Solutions

Significant and expedited improvements in regulatory and public policy are needed at the national, state, and municipal levels to address the health and well-being of at-risk communities in Delaware and elsewhere. In 2017, the EPA adopted revisions to its Risk Management Plan rule for chemical facilities (EPA 2017a) that have the potential to improve the safety of chemical facilities and the ability of communities to prepare for—and respond to—accidents at these dangerous facilities (Kothari 2016). However, implementation of the revised RMP

TABLE 5. Sources of Chemical Hazards and Pollution in Environmental Justice Communities Compared with Greenville and Delaware Overall

		RMP Facilities	TRI Facilities	Brownfield Sites	Superfund Sites
Environmental Justice Communities	Southbridge	2	13	48	4
	Dunleith	2	9	6	1
	Oakmont	2	6	4	1
	Cedar Heights	0	6	0	2
	Belvedere	0	4	0	0
	Marshallton	0	2	0	0
	Newport	0	5	0	2
Comparison Community	Greenville	0	0	0	0
Entire State	Delaware	45	157	83	47

Note: All facilities are located within 1 mile of communities.

SOURCE: EPA N.D.1.

TABLE 6. Respiratory Hazard and Cancer Risks at Schools in Environmental Justice Communities Compared with Greenville

		Schools	Total Number of Students*	Cancer Risk	Respiratory Hazard Index
Environmental Justice Communities	Belvedere	Conrad Schools of Science	1153	39.75	1.82
		Richey Elementary School	429	42.19	2.02
		Delcastle Technical High School	1519	40.08	1.82
	Cedar Heights	Conrad Schools of Science	1153	39.75	1.82
		Richey Elementary School	429	42.19	2.02
		Delcastle Technical High School	1519	40.08	1.82
	Dunleith	McCullough Middle School	754	41.86	1.97
		Eisenberg Elementary School	661	42.56	2.11
		Leach School			
	Marshallton	Mote Elementary School	598	47.97	2.60
		St. John the Beloved School	594	42.42	2.06
		Delcastle Technical High School	1519	40.08	1.82
	Newport	Delcastle Technical High School	1519	40.08	1.82
		Delaware Military Academy	1778	42.19	2.02
		Richardson Park Learning Center			
		Richardson Park Elementary School			
	Oakmont	Richey Elementary School			
		Conrad Schools of Science	1380	39.75	1.82
		St. Matthew School			
		McCullough Middle School	754	41.86	1.97
	Southbridge	Elbert-Palmer Elementary School	246	42.95	2.00
		Stubbs (Frederick Douglass) Elementary School	1224	64.06	3.23
		Howard High School of Technology			
		Bancroft Elementary School	489	58.05	2.89
		Elementary Workshop Montessori School			
		St. Michael's School & Nursery			
		Kuumba Academy Charter School	298	105.73	5.58
Comparison Community	Greenville	Prestige Academy	287	46.45	2.17
		St. Peter Cathedral School	192	65.62	3.60
		duPont Middle School	1596	37.38	1.60
		duPont High School			

*Some schools are within one mile of more than one community; therefore, the columns from the community numbers cannot be added to get totals.

Notes: Cancer risk is expressed as the incidences of cancer per million people. For the respiratory hazard index, an index value greater than 1 indicates the potential for adverse respiratory health impacts, with increasing concern as the value increases.

SOURCES: NCES N.D.A.; NCES N.D.B.; EPA 2015.



Mobile air monitoring stations like this one from the Delaware Department of Natural Resources and Environmental Control can allow communities to obtain air pollution data from locations without permanent monitoring but where pollutant levels may be high.

rule was placed on hold, and in of June 2017 the Trump administration delayed the rule's implementation until February 19, 2019 (Rest 2017).

The first four recommendations that follow aim to improve the safety of high-risk industrial facilities, expand communities' access to information about the severe hazards posed by nearby facilities, restrict the siting of schools and other facilities near dangerous facilities, and improve communities' preparedness for responding to a toxic chemical release. These recommendations may have the additional benefit of reducing the daily load of toxic air pollution that affects these communities. The next two recommendations address both the severe risks from chemical facility accidents as well as the risks from daily chronic exposure to toxic air pollution. The last recommendation addresses the need to reduce motor vehicle air pollution in these communities.

1. **Require chemical facilities to use safer chemicals and technologies.** Companies that own chemical facilities should adopt inherently safer chemicals and technologies wherever feasible as the most effective way to prevent deaths and injuries from chemical disasters. The EPA should enforce the Risk Management Program requirement that high-risk chemical facilities assess the use of safer processes and, further, should require that these safer alternatives be adopted wherever feasible.

2. **Ensure that chemical facilities share information and their emergency response plans with nearby communities.** Chemical facilities should provide nearby local communities with essential information on hazards posed by their operations and their planned response in the event of an unplanned release of hazardous chemicals. Local residents, trained health care professionals, emergency responders, and health-care providers need this information to prepare for and effectively respond to a chemical disaster. Communities should be included in emergency response planning and implementation. Emergency response facilities and the measures devised under these plans should be ready for operation should a chemical release occur. The EPA as well as state and local agencies should ensure that communities have access through effective and purposeful outreach to information on hazards and emergency planning under its Risk Management Program and that they have information on facility hazards submitted to states under the Emergency Planning and Community Right-to-Know Act.
3. **Require large chemical facilities to continuously monitor and publicly report their fenceline-area emissions and health hazards.** "Near miss" incidents that result in unplanned releases of toxic chemicals are often precursors to more serious incidents at chemical

facilities and facility malfunctions, serious incidents that could result in the release of high levels of toxic chemicals that may directly impact the health of people living in nearby communities. People living in nearby communities should be able to easily access information (based on validated continuous monitoring) on the toxic emissions coming from industrial facilities, along with information about the chemicals' health hazards. The EPA or state or local pollution control agencies should expand current requirements for oil refineries to monitor benzene at their fence line by adding other toxic air pollutants such as toluene and xylene and requiring fenceline monitoring for other major industrial sources. This information can help communities in several ways: to advocate for vigorous enforcement of regulatory requirements by relevant authorities; push companies to use safer chemicals; alert and educate friends, family members, and community members; and encourage the media to report on polluting facilities in their areas.

A focus on cumulative impacts is a cornerstone of environmental justice. Environmental and public health agencies in Delaware and at the federal level should assess the potential impact of unplanned chemical releases and the cumulative impacts of daily air-pollution exposures on the health of nearby communities and should incorporate such assessments into agency decisionmaking. Agencies and elected officials should provide the affected communities with the tools and resources they need to fully engage in the assessment process, and the EPA should review hazard assessments of these communities. Emissions permits, for example, should be strengthened where necessary to account for the cumulative impact of air-pollution emissions on nearby communities and provide the reductions in air pollution necessary to protect public health—in particular vulnerable populations, such as the elderly, children, and people with existing health conditions.

Delaware's Coastal Zone Act should be amended to include an environmental justice analysis. A science-based stakeholder process should be created before any changes to the legislation can be voted on. The stakeholder process should be a science-based, facilitated dialogue that provides for communities, workers, fisherfolk, and other coastal communities to have input into the entire process. The process should allow stakeholders to determine for themselves the impacts of cumulative risk, provide an environmental justice analysis, and determine a path toward safer processes and a healthier, greener port.

People living in fenceline communities should be able to easily access the information on the toxic emissions coming from industrial facilities.

4. **Prevent the construction of new or expanded chemical facilities near homes and schools and, conversely, the siting of new homes and schools near dangerous chemical plants.** When new chemical facilities are sited or existing ones are expanded in close proximity to homes, schools, or playgrounds, this significantly increases the possibility that an incident will result in serious harm to children and adults. Similarly, new homes, schools, and playgrounds should not be sited near dangerous chemical plants. Municipal authorities should adopt and enforce local ordinances that require an assessment of the potential health and safety risks when siting homes, schools, and other public facilities. Requiring a buffer zone between these areas and polluting sources also reduces residents' daily exposure to toxic chemical pollution.
5. **Require that publicly accessible, comprehensive health-impact assessments and mitigation plans be conducted to evaluate the cumulative impact of hazardous chemical exposures on nearby communities.**

6. **Strengthen the enforcement of existing environmental and workplace health and safety regulations.** Environmental and workplace safety enforcement is historically underfunded and now under threat (CEG 2015). Congress and the administration should preserve the EPA's authority and should increase funding to the EPA and the states for improving the enforcement of environmental and workplace health and safety laws, so that problems in chemical facilities can be identified before they lead to disasters. Better oversight and enforcement will also help agencies and the public hold companies accountable if they fail to address identified hazards and emissions of toxic pollution.

A focus on cumulative impacts is a cornerstone of environmental justice.

Communities that face some of the greatest threats from chemical facility incidents, toxic air pollution, and contaminated sites need strong governmental policies, including strict permitting requirements and reliable inspection and enforcement of these requirements. If state and municipal governments are not providing adequate protection, it is essential that the EPA defend these communities' right to a safe environment. Locally, cities and counties must do a better job of enforcement in areas of "jurisdictional overlap." There must be an accountability mechanism in place for communities to enforce existing ordinances, especially those with a goal of protecting public health.

7. **Adopt and enforce strict motor vehicle emissions standards and limit heavy-duty truck traffic and idling in residential areas.** In 2014 the EPA adopted strict motor vehicle emission limits ("Tier 3" standards) to reduce hazardous air pollution from motor vehicles that phase in over the model year 2017–2025 timeframe (EPA 2014). These emissions standards complement the EPA's 2012 greenhouse gas limits and fuel economy standards (EPA 2012), and together these rules are expected to

substantially reduce motor vehicle toxic air and climate pollution over the next decade. It is essential that the EPA effectively enforce these current standards and that future standards be adopted that further reduce this pollution. Further, heavy-duty truck traffic should be limited, and idling should be eliminated in residential areas in order to reduce community exposures to these harmful emissions.

Ronald White is a consultant and senior fellow in the Center for Science and Democracy at UCS. Denise Moore is a global information systems analyst and consultant for UCS. Octavia Dryden is a native of Wilmington, Delaware; a member of the Delaware Concerned Residents for Environmental Justice; and executive director of Community Housing & Empowerment Connections, Inc. Michele Roberts is national co-coordinator of the Environmental Justice Health Alliance for Chemical Policy Reform; a native of Wilmington, Delaware; and has a background in environmental science. Jessica Thomas is the outreach and program coordinator in the Center. Charise Johnson is a research associate in the Center. Gretchen Goldman is the research director in the Center.



Regular monitoring of air quality near pollution sources is crucial to understanding community exposure to harmful pollutants.

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ENDNOTES

- 1 For the EPA, overburdened communities are "minority, low-income, tribal, or indigenous populations or geographic locations in the United States that potentially experience disproportionate environmental harms and risks. This disproportionality can be as a result of greater vulnerability to environmental hazards, lack of opportunity for public participation, or other factors. Increased vulnerability may be attributable to an accumulation of negative or lack of positive environmental, health, economic, or social conditions within these populations or places. The term describes situations where multiple factors, including both environmental and socio-economic stressors, may act cumulatively to affect health and the environment and contribute to persistent environmental health disparities" (EPA n.d.b).
- 2 For more information, see www.rtknet.org.

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Environmental Justice for Delaware

*Mitigating Toxic Pollution in New Castle
County Communities*

Environmental justice communities in Delaware face substantial cumulative health risks from exposure to toxic air pollution, much greater than those faced by wealthy White neighborhoods.

This report studies the health risks for seven communities located along an industrial corridor in the northern portion of Delaware's New Castle County. These communities—Belvedere, Cedar Heights, Dunleith, Marshallton, Newport, Oakmont, and Southbridge—have higher percentages of people of color and/or higher poverty levels than the Delaware average and compared them to Greenville, a predominantly White and affluent community located outside the industrial corridor and to the population of Delaware overall.

We found that people in the seven communities face a substantial cumulative health risk from exposure to toxic air pollution and their proximity to polluting industrial facilities, hazardous

chemical facilities, and contaminated waste sites. These health risks are substantially greater than those experienced by residents of a nearby wealthier and predominantly White community in Delaware and for Delaware as a whole.

Significant and expedited improvements in regulatory and public policy are needed at the national, state, and municipal levels to address these issues. Our recommendations aim to improve the safety of high-risk industrial facilities, expand communities' access to information about the severe hazards posed by nearby facilities, restrict the siting of schools and other facilities near dangerous facilities, improve communities' preparedness for responding to a toxic chemical release, and more.

FIND THE FULL REPORT ONLINE: www.ucsusa.org/EJDelaware

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